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ABSTRACT

Ten units of instruction are provided in this curriculum guide on agricultural livestock skills. Unit topics are as follow: (1) restraining, (2) vaccination, (3) livestock castration, (4) dehorning, (5) docking, (6) growth stimulants, (7) identification, (8) shearing, (9) hoof trimming, and (10) birth assistance. Each instructional unit generally includes the following components: performance objectives (unit and specific student objectives), suggested activities for teachers and students, information sheets, student assignment sheets, job sheets (step-by-step outlines of skills) transparency masters, tests, and test answer sheets. (JH)

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VOCATIONAL AGRICULTURE EDUCATION

AGRICULTURAL LIVESTOCK SKILLS

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Stillwater, Oklahoma

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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Curriculum and Instructional Materials Center
For the Division of Vocational Agriculture Education
Ralph Dreessen, State Supervisor
Oklahoma State Board of Vocational and Technical Education
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FOREWORD

This publication is designed to provide a supplement to the basic core curriculum in vocational agriculture in Oklahoma. The purpose of this guide is to assist teachers in improving instruction in basic livestock skills.

The teachers may use these materials to assist them in providing instruction for their students in the various agriculture topics. The agriculturists of today and tomorrow must be knowledgeable and well informed in order to make the many decisions required in the occupation of their choice.

Appreciation is expressed to the many individuals who helped in the development of this publication. The teaching of vocational agriculture should become more effective with its use.

Francis T. Tuttle, State Director
Oklahoma State Department of Vocational
and Technical Education

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and Technical Education

PREFACE

Not only do the technical areas of agriculture require new materials, but the changing demands of the agriculture industry require the student to become highly skilled in several areas, resulting in the need for up-to-date curriculum. Many of the vocational agriculture graduates have not achieved the on-farm skills as demanded by the industry. Because of this need, this manual was developed.

Agricultural Livestock Skills will certainly be an asset to the vocational agriculture instructor who has not achieved a high level of self-confidence in many of these skill areas and will help to reinforce his or her teaching and confidence.

Every effort has been made to make this publication basic, readable, and by all means usable. This writer will be the first to admit that the publication does not cover every area of livestock skill training, but it does provide the basics and gives the student the opportunity to progress without a great deal of repetition.

Three vital parts of instruction have been left out of the publication intentionally: motivating, personalizing, and localizing. These areas are left to the individual instructors, and such instructors should capitalize on them. Then and only then will this publication become a vital part of the teaching-learning process. Many instructors wish to supplement this publication with additional materials which they feel necessary for their particular area of the state; by all means do so.

After teaching from this publication, each instructor should be able to say that this approach is "the way" because all of the resources are focused toward a measurable outcome. The student should be able to perform at a higher level because both the student and the instructor know exactly where each is going.

During the past eight years, the Curriculum and Instructional Materials Center staff has strived to develop and disseminate the best instructional materials possible. Every effort has been made to insure success with implementation of this curriculum. The CIMC's resources are always available to vocational teachers.

Greg Pierce, Agriculture Specialist
Curriculum and Instructional
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and Technical Education

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A special note of gratitude is given to Jon Dickey and Edith Mekis for the illustrations and to Teddi Cox, Terra Stone, and Chris Benson for typing and quick copy.

Thanks also to those persons who allowed us to interrupt their busy schedules to take photographs for this manual.

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USE OF THIS PUBLICATION

Instructional Units

Agricultural Livestock Skills includes ten units of instruction. Each instructional unit includes some or all of the basic components of a unit of instruction: performance objectives, suggested activities for instructor and students, information sheets, assignment sheets, job sheets, visual aids, tests, and answers to the test. Units are planned for more than one lesson or class period of instruction.

Careful study of each instructional unit by the teacher will help to determine:

- A. The amount of material that can be covered in each class period
- B. The skills which must be demonstrated
 - 1. Supplies needed
 - 2. Equipment needed
 - 3. Amount of practice needed
 - 4. Amount of class time needed for demonstrations
- C. Supplementary materials such as pamphlets or filmstrips that must be ordered
- D. Resource people that must be contacted

Objectives

Each unit of instruction is based on performance objectives. These objectives state the goals of the course, thus providing a sense of direction and accomplishment for the student.

Performance objectives are stated in two forms: unit objectives, stating the subject matter to be covered in a unit of instruction, and specific objectives, stating the student performance necessary to reach the unit objective.

Since the objectives of the unit provide direction for the teaching-learning process, it is important for the teacher and students to have a common understanding of the intent of the objectives. A limited number of performance terms have been used in the objectives for this curriculum to assist in promoting the effectiveness of the communication among all individuals using the materials.

Following is a list of performance terms and their synonyms which may have been used in this material:

<u>Name</u>	<u>Identify</u>	<u>Describe</u>
Label	Select	Define
List in writing	Mark	Discuss in writing
List orally	Point out	Discuss orally
Letter	Pick out	Interpret
Record	Choose	Tell how
Repeat	Locate	Tell what
Give		Explain

Order

Arrange
Sequence
List in order
Classify
Divide
Isolate
Sort

Distinguish

Discriminate

Construct

Draw
Make
Build
Design
Formulate
Transcribe
Reduce
Increase
Figure

Demonstrate

Show your work
Show procedure
Perform an experiment
Perform the steps
Operate
Remove
Replace
Turn off/on
(Dis) assemble
(Dis) connect

Reading of the objectives by the student should be followed by a class discussion to answer any questions concerning performance requirements for each instructional unit.

Instructors should feel free to add objectives which will fit the material to the needs of the students and community. When a teacher adds objectives, he/she should remember to supply the needed information, assignment and/or job sheets, and criterion tests.

Suggested Activities

Each unit of instruction has a suggested activities sheet outlining steps to follow in accomplishing specific objectives. Duties of the instructor will vary according to the particular unit. However, for best use of the material they should include the following: provide students with objective sheet, information sheet, assignment sheets, and job sheets; preview filmstrips, make transparencies, and arrange for resource materials and people; discuss unit and specific objectives, information sheet, and assignment sheets; demonstrate and discuss procedures outlined on job sheets; give test. Teachers are encouraged to use any additional instructional activities and teaching methods to aid students in accomplishing the objectives.

Information Sheet

The information sheet provides content essential for meeting the cognitive (knowledge) objectives of the unit. The teacher will find that the information sheet serves as an excellent guide for presenting the background knowledge necessary to develop the skill specified in the unit objective.

Students should read the information sheet before the information is discussed in class. Students may take additional notes on the information sheet.

Transparency Masters

Transparency masters provide information in a special way. The students may see as well as hear the material being presented, thus reinforcing the learning process. Transparencies may present new information or they may reinforce information presented in the information sheet. They are particularly effective when identification is necessary.

Transparencies should be made and placed in the notebook where they will be immediately available for use. Transparencies direct the class's attention to the topic of discussion. They should be left on the screen only when topics shown are under discussion. (NOTE: Stand away from the overhead projector when discussing transparency material. The noise of the projector may cause you to speak too loudly.)

Assignment Sheets

Assignment sheets give direction to study and furnish practice for paper and pencil activities to develop the knowledges which are necessary prerequisites to skill development. These may be given to the student for completion in class or used for homework assignments. Answer sheets are provided which may be used by the student and/or teacher for checking student progress.

Job Sheets

Job sheets are an important segment of each unit. The instructor should be able to and in most situations should demonstrate the skills outlined in the job sheets. Procedures outlined in the job sheets give direction to the skill being taught and allow both student and teacher to check student progress toward the accomplishment of the skill. Job sheets provide a ready outline for a student to follow if he/she has missed a demonstration. Job sheets also furnish potential employers with a picture of the skills being taught and the performances she/he might reasonably expect from a person who has had this training.

Test and Evaluation

Paper-pencil and performance tests have been constructed to measure student achievement of each objective listed in the unit of instruction. Individual test items may be pulled out and used as a short test to determine student achievement of a particular objective. This kind of testing may be used as a daily quiz and will help the teacher spot difficulties being encountered by students in their efforts to accomplish the unit objective. Test items for objectives added by the teacher should be constructed and added to the test.

Test Answers

Test answers are provided for each unit. These may be used by the teacher and/or student for checking student achievement of the objectives.

Page Numbering System

Pages are numbered consecutively throughout the manual. If the page is available as a transparency master, TM appears at the bottom of the page.

The following key will help to easily identify each unit by color:

- White - Objectives and Transparency Masters
- Green - Information Sheet
- Buff - Assignment Sheets
- Blue - Job Sheets
- Yellow - Test
- Pink - Suggested Activities, Answers to Assignment Sheets, and Answers to Test

RESTRAINING UNIT I

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to restrain cattle, swine, and sheep. This knowledge will be evidenced through completion of the job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with restraining to the correct definitions.
2. Select from a list safety factors to observe in working livestock.
3. Identify restraints for cattle.
4. Identify restraints for sheep.
5. Identify restraints for swine.
6. Classify handling characteristics for cattle, swine, and sheep.
7. Demonstrate the ability to:
 - a. Use flank casting and castration restraint on cattle.
 - b. Use vaccination or castration restraint on small pigs.
 - c. Use castration and docking restraint on small sheep.

RESTRAINING UNIT I

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information and job sheets.
 - C. Discuss unit and specific objectives.
 - D. Discuss information sheet.
 - E. Demonstrate and discuss procedures outlined in the job sheets.
 - F. Take a field trip and have each student demonstrate the job sheets.
 - G. Use a student to relate personal experiences in working around livestock.
 - H. Give test.
 - I. Reteach if necessary.
- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Job sheets
 1. Job Sheet #1--Use Flank Casting and Castration Restraint on Cattle
 2. Job Sheet #2--Use Vaccination or Castration Restraint on Small Pigs
 3. Job Sheet #3--Use Castration and Docking Restraint on Small Sheep
 - D. Test
 - E. Answers to test
- III. Unit reference--Leahy, John, and Barrow, Pat. *Restraint of Animals*. Ithaca, New York: Leahy and Barrow, 1951.

RESTRAINING UNIT I

INFORMATION SHEET

- I. Terms and definitions
 - A. Restraining--Process of hindering animal from action or motion for the purpose of foot trimming, surgery, or other operations
 - B. Mechanical restraint--Holding animal with machinery
 - C. Physical restraint--Holding animal with bodily force
 - D. Casting--Throwing an animal
 - E. Tranquilizer--Drug used to calm an animal
 - F. Chemical restraint--Controlling an animal with tranquilizers
- II. Safety factors to observe in working livestock
 - A. Handle and restrain animals with care to prevent injury to animal or anyone present
 - B. Keep your distance or leave yourself room to stay back out of the way to avoid being stepped on or kicked

(NOTE: Most animals reach farther to the rear, not so far to the front, and very little to the sides.)
 - C. Do not trust bulls, rams, or boars no matter how docile they may seem
 - D. Do not trust females who have young

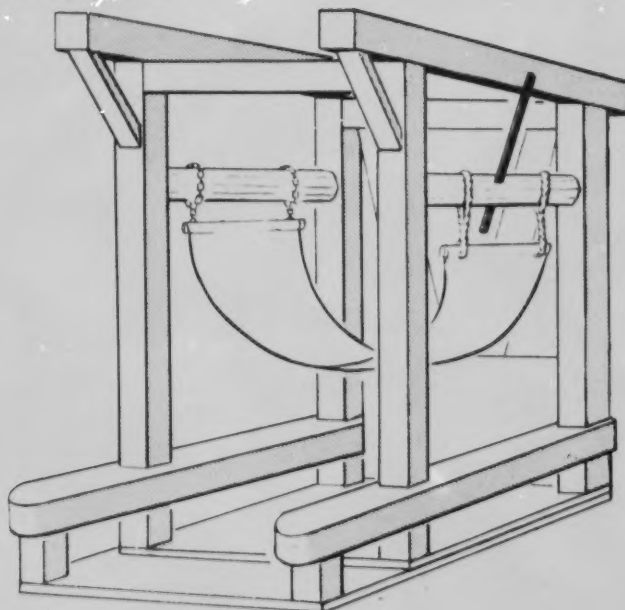
(NOTE: Females with young often become cross or ill-natured when protecting them.)

INFORMATION SHEET

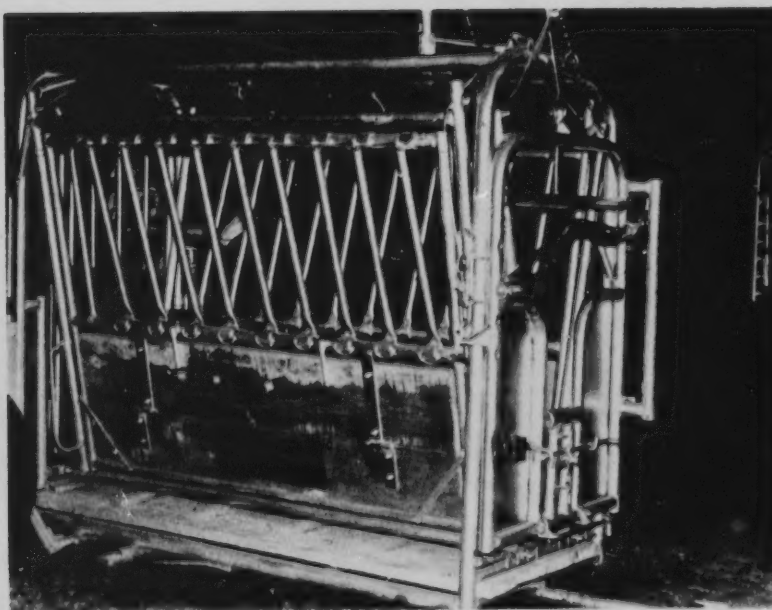
III. Restraints for cattle

A. Mechanical restraints

1. Cattle stock



2. Cattle chute and headgate



INFORMATION SHEET

3. Tilting calf table



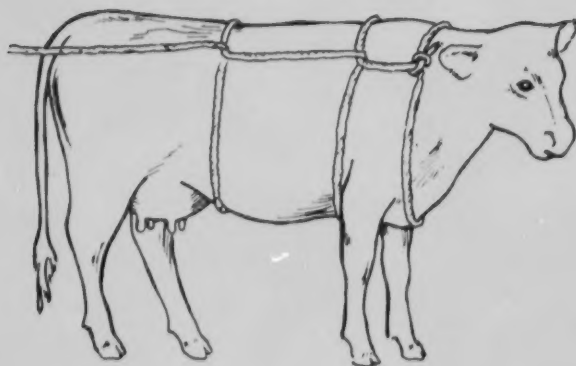
4. Tilting table stock



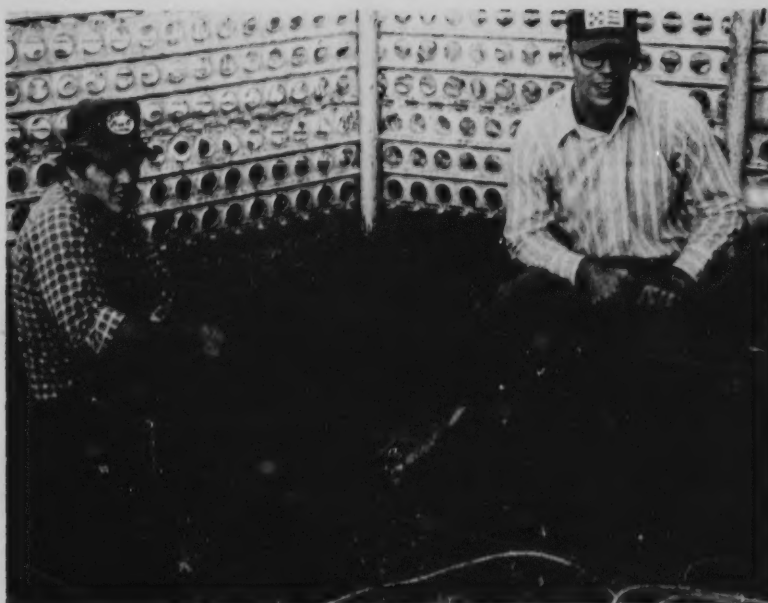
INFORMATION SHEET

B. Physical restraints

1. Rope squeeze casting



2. Castration restraint



INFORMATION SHEET

3. Calf castration tie



C. Catching methods

1. Flank casting



INFORMATION SHEET

2. Rope



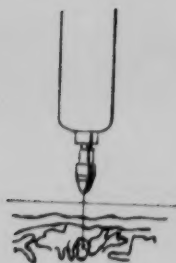
D. Chemical restraints

1. Oral chemical injection



INFORMATION SHEET

2. Intramuscular chemical injection



IV. Restraints for sheep

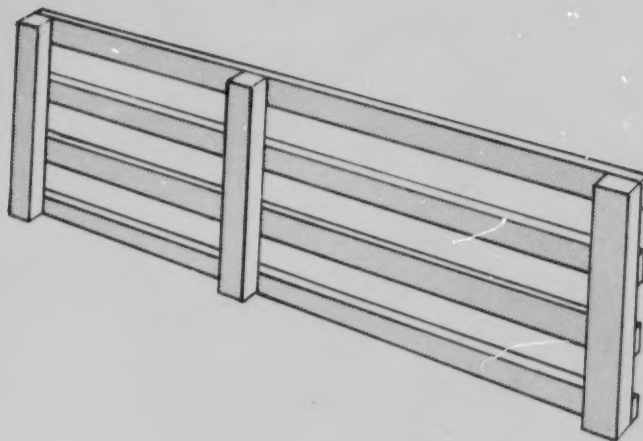
A. Mechanical restraints

1. Trimming stand

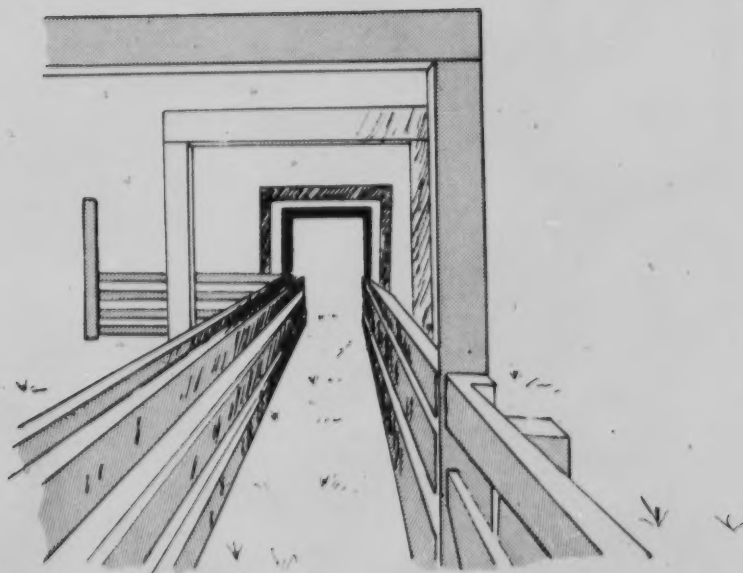


INFORMATION SHEET

2. Panels

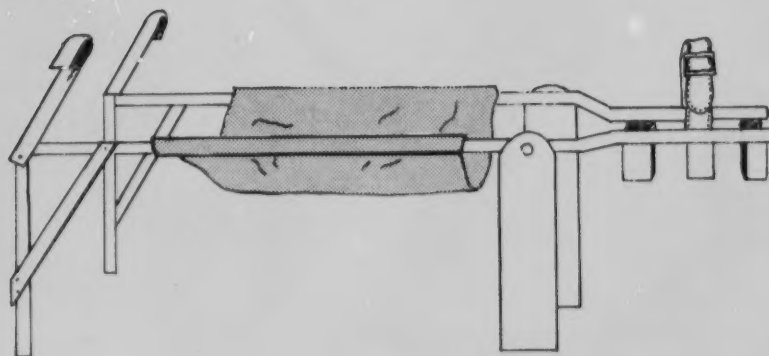


3. Chute



INFORMATION SHEET

4. Pregnancy testing table



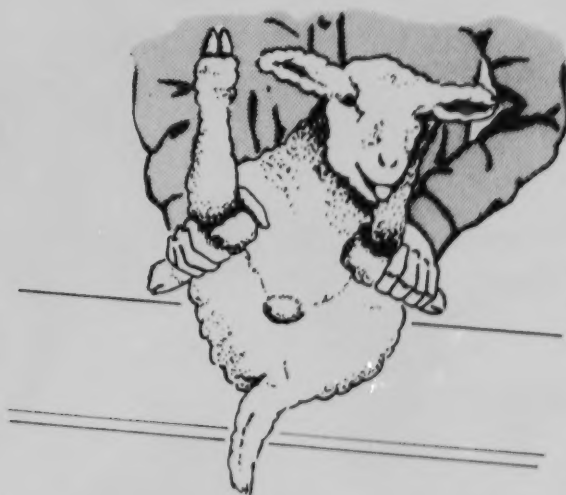
B. Physical restraints

1. Chin catch restraint



INFORMATION SHEET

2. Castration and docking restraint for small sheep



3. Shearing stance



INFORMATION SHEET

4. Halter



C. Catching methods

(NOTE: Never catch sheep by their wool.)

1. Flank catch



INFORMATION SHEET

2. Chin catch restraint



V. Restraints for swine

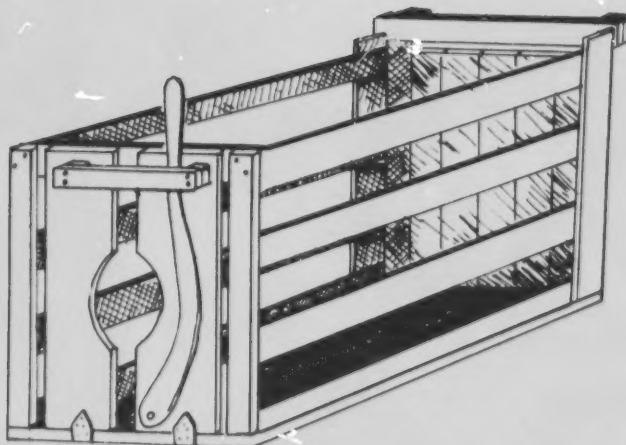
A. Mechanical restraints

1. Hog holder



INFORMATION SHEET

2. Pig trap



3. Snubbing rope



INFORMATION SHEET

B. Physical restraints

1. Vaccination or castration restraint for small pigs



2. Vaccination or castration restraint for large pigs



INFORMATION SHEET

C. Catching methods

1. Tail and ear

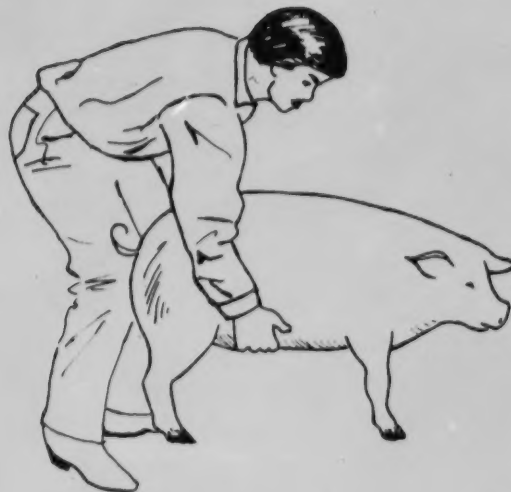


2. Heart girth



INFORMATION SHEET

3. Flank



VI. Handling characteristics

(NOTE: All livestock should be treated with respect.)

A. Cattle

1. Nervous, docile, or balking animals should be identified
2. They do not respond to argument or reasoning
3. Mature animals should not be restrained with ropes alone
4. Hot shots, whips, and dogs should be used sparingly
5. People, dogs, closed gates, panels, and similar objects cause them to turn
6. Strangers affect their actions

B. Swine

1. They are stubborn and have definite ideas of their own
2. They are not athletic and cannot stand very rough handling, especially in hot weather
3. Their eyesight is not too keen and for this reason they are easily frightened

INFORMATION SHEET

4. It is instinctive for them to find a small opening and head for it

Example: Space between your legs

5. Body is so smooth the animal is able to slip through one's hands and elude catching
6. It is difficult to drive or pull them because they usually want to go in the other direction
7. Offering feed is often a very good method to coax them
8. People, dogs, closed gates, panels, and similar objects cause them to turn
9. The slower you move, the faster you get the job done

C. Sheep

1. They are natural jumpers
2. They have a flocking instinct
3. People, dogs, closed gates, panels, and similar objects cause them to turn

RESTRAINING UNIT I

JOB SHEET #1--USE FLANK CASTING AND CASTRATION RESTRAINT ON CATTLE

I. Materials and equipment

A. Lightweight calf, 250 to 300 lbs

B. Rope

II. Procedure

(NOTE: You will need someone to help you with the castration restraint.)

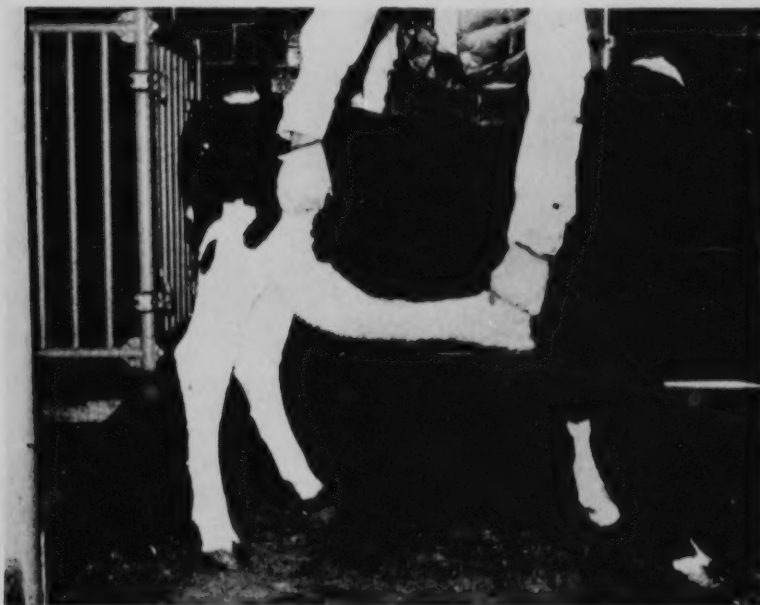
A. Flank casting

1. Rope calf

2. Approach calf with accuracy but do not overexcite

3. Reach across the calf's back and grasp hindflank and foreleg with hands (Figure 1)

FIGURE 1



JOB SHEET #1

4. Lift calf from the ground with arms pulling on the hindflank and foreleg

(NOTE: Your knees should be pushing on calf's side. See Figure 2.)

FIGURE 2



5. Ease calf down with the weight against your legs so that the calf falls to the ground gently

B. Castration restraint

1. Release hindflank quickly and grasp foreleg with both hands
2. Place one knee on neck and other knee behind shoulders, facing calf's foreleg
3. Pull calf's foreleg up toward your stomach (Figure 3)

FIGURE 3



JOB SHEET #1

(NOTE: The following steps are done by the second student.)

4. Grab upper hind leg at hock and ankle with hands and pull it back from the calf
5. Sit down behind calf with one leg out toward the calf's rump and the other leg pushing the bottom hind leg of calf just above the hock, moving the calf's leg as far forward as possible (Figure 4)

FIGURE 4



RESTRAINING
UNIT I

JOB SHEET #2--USE VACCINATION OR CASTRATION
RESTRAINT ON SMALL PIGS

- I. Materials and equipment--Weaning age pig or pig under 60 lbs
- II. Procedure
 - A. Grab pig by hindlegs with hands
 - B. Pick pig up off the ground, pulling the pig toward your body

(NOTE: For castration, the pig's back should be against you. See Figure 1.)

FIGURE 1



JOB SHEET #2

(NOTE: For vaccination, pig's abdomen may be against you with pig's shoulders between your legs. See Figure 2.)

FIGURE 2



RESTRAINING
UNIT I

JOB SHEET #3--USE CASTRATION AND DOCKING
RESTRAINT ON SMALL SHEEP

I. Materials and equipment

- A. Young lamb
- B. Worktable

II. Procedure

- A. Catch lamb by the flank (Figure 1)

FIGURE 1

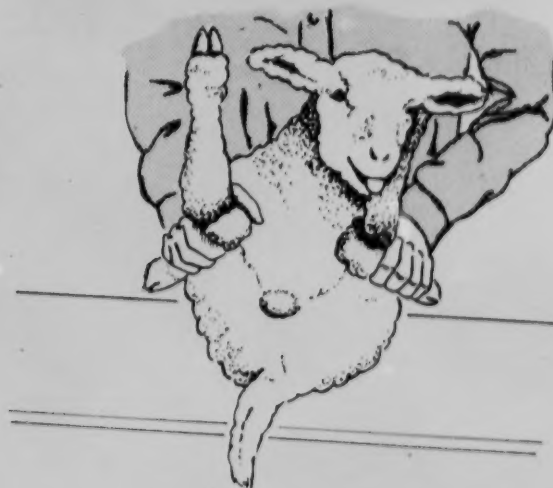


- B. Hold lamb with its back against you and its head up
- C. Bring front legs of lamb down and hook over each hind leg

JOB SHEET #3

- D. Rest rump of lamb on the worktable (Figure 2)

FIGURE 2



RESTRAINING UNIT I

TEST

NAME _____ SCORE _____

1. Match the terms on the right to the correct definitions.

- | | |
|---|-------------------------|
| _____ a. Throwing an animal | 1. Restraining |
| _____ b. Holding animal with machinery | 2. Mechanical restraint |
| _____ c. Process of hindering animal from action or motion for the purpose of foot trimming, surgery, or other operations | 3. Physical restraint |
| _____ d. Holding animal with bodily force | 4. Casting |
| _____ e. Drug used to calm an animal | 5. Chemical restraint |
| _____ f. Controlling an animal with tranquilizers | 6. Tranquilizer |

2. Select from the list below safety factors to observe in working livestock. Place an "X" by the correct answer.

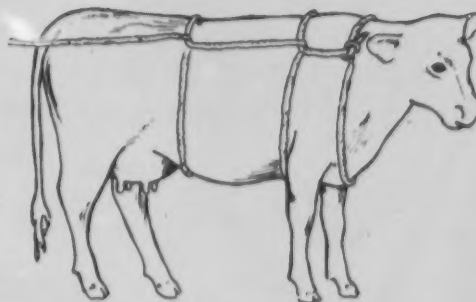
- _____ a. Use hot shots, dogs, and whips often to keep animals moving
- _____ b. Move quickly around livestock
- _____ c. Do not trust females who have young
- _____ d. Handle and restrain livestock with care to prevent injury to animal or anyone present
- _____ e. Keep to the rear of most animals because they reach farther to the front, not so far to the side, and very little to the rear
- _____ f. Keep your distance or leave yourself room to stay back out of the way to avoid being stepped on or kicked
- _____ g. Do not trust bulls, rams, or boars no matter how docile they may seem

3. Identify the following restraints for cattle.

a. Physical restraints



1) _____

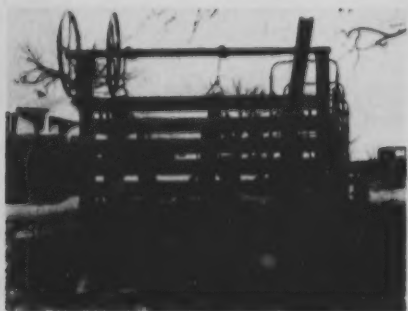


2) _____



3) _____

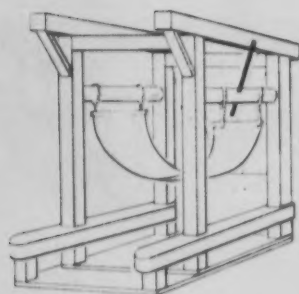
b. Mechanical restraints



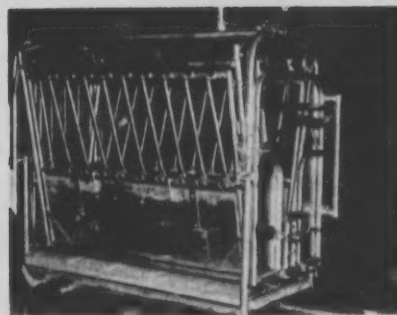
1) _____



2) _____



3) _____



4) _____

c. Catching methods

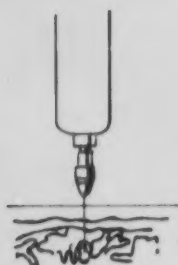


1) _____



2) _____

d. Chemical restraints



1) _____



2) _____

4. Identify the following restraints for sheep.

a. Physical restraints



1) _____



2) _____

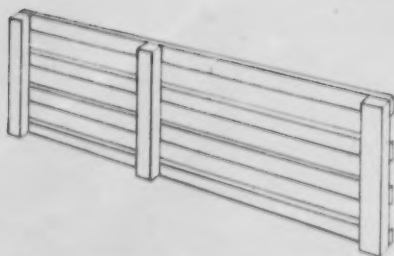


3) _____



4) _____

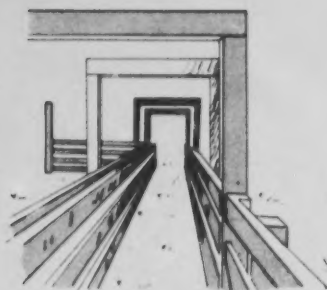
b. Mechanical restraints



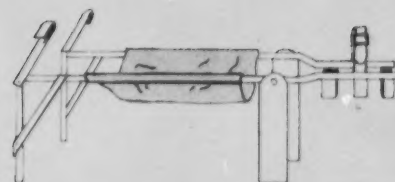
1) _____



2) _____



3) _____

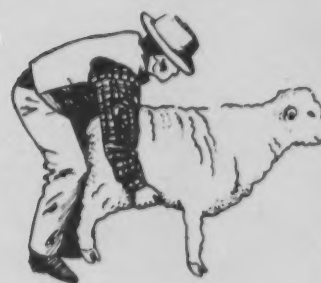


4) _____

c. Catching methods



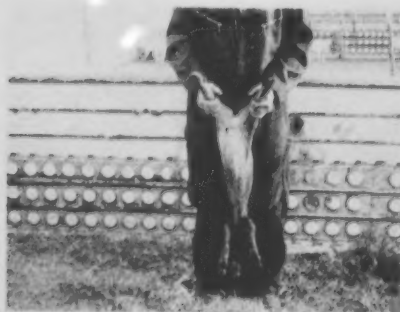
1) _____



2) _____

5. Identify the following restraints for swine.

a. Physical restraints



1) _____



2) _____

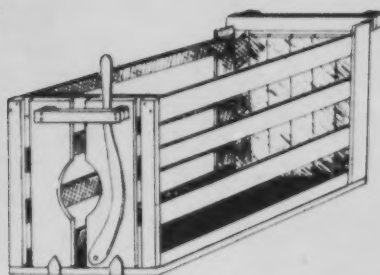
b. Mechanical restraints



1) _____



2) _____



3) _____

c. Catching methods



1) _____



2) _____



3) _____

6. Classify handling characteristics for livestock by placing a "C" for cattle, an "S" for sheep, and an "H" for swine in the blanks. (Some blanks have more than one correct answer.)

- _____ a. They are stubborn and have definite ideas of their own
- _____ b. People, dogs, closed gates, panels, and similar objects cause them to turn
- _____ c. They are natural jumpers
- _____ d. They have a flocking instinct
- _____ e. Hot shots, whips, and dogs should be used sparingly
- _____ f. They are not athletic and cannot stand very rough handling, especially in hot weather
- _____ g. It is difficult to drive or pull them because they usually want to go in the other direction
- _____ h. Body is so smooth the animal is able to slip through one's hands and elude catching
- _____ i. Offering feed is often a very good method to coax them
- _____ j. It is instinctive for them to find a small opening and head for it
- _____ k. Mature animals should not be restrained with ropes alone
- _____ l. They do not respond to argument or reasoning
- _____ m. Nervous, docile, or balking animals should be identified
- _____ n. Their eyesight is not too keen and for this reason they are easily frightened

_____o. Strangers affect their actions

_____p. The slower you move, the faster you get the job done

7. Demonstrate the ability to:

- a. Use flank casting and castration restraint on cattle.
- b. Use vaccination or castration restraint on small pigs.
- c. Use castration and docking restraint on small sheep.

(NOTE: If the above activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

RESTRAINING UNIT I

ANSWERS TO TEST

1. a. 4
b. 2
c. 1
d. 3
e. 6
f. 5
2. c, d, f, g
3. a. Physical restraints
 - 1) Castration restraint
 - 2) Rope squeeze casting
 - 3) Calf castration tieb. Mechanical restraints
 - 1) Tilting table stock
 - 2) Tilting calf table
 - 3) Cattle stock
 - 4) Cattle chute and headgatec. Catching methods
 - 1) Rope
 - 2) Flank castingd. Chemical restraints
 - 1) Intramuscular chemical injection
 - 2) Oral chemical injection

4. a. Physical restraints

- 1) Castration and docking restraint for small sheep
- 2) Chin catch restraint
- 3) Shearing stance
- 4) Halter

b. Mechanical restraints

- 1) Panels
- 2) Trimming stand
- 3) Chute
- 4) Pregnancy testing table

c. Catching methods

- 1) Chin catch restraint
- 2) Flank catch

5. a. Physical restraints

- 1) Vaccination or castration restraint for small pigs
- 2) Vaccination or castration restraint for large pigs

b. Mechanical restraints

- 1) Hog holder
- 2) Snubbing rope
- 3) Pig trap

c. Catching methods

- 1) Heart girth
- 2) Tail and ear
- 3) Flank

- | | | | | | |
|-------|---------|----|---|----|---|
| 6. a. | H | h. | H | o. | C |
| b. | C, S, H | i. | H | p. | H |
| c. | S | j. | H | | |
| d. | S | k. | C | | |
| e. | C | l. | C | | |
| f. | H | m. | C | | |
| g. | H | n. | H | | |

7. Performance skills evaluated to the satisfaction of the instructor

VACCINATION UNIT II

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to give subcutaneous and intramuscular injections. This knowledge will be evidenced through completion of job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with vaccination to the correct definitions.
2. Select from the list do's and don'ts of vaccination.
3. Identify the parts of a syringe.
4. Arrange in order the steps for syringe use and care.
5. Match types of injections to the correct descriptions.
6. Identify types of injection sites.
7. List the proper vaccination time for common diseases.
8. Demonstrate the ability to:
 - a. Give intramuscular injection.
 - b. Give subcutaneous injection.

VACCINATION UNIT II

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information and job sheets.
 - C. Make transparency.
 - D. Discuss unit and specific objectives.
 - E. Discuss information sheet.
 - F. Demonstrate and discuss procedures outlined in the job sheets.
 - G. Invite local veterinarian or rancher to review contents of unit and demonstrate vaccination procedures.
 - H. Discuss importance of vaccination procedures.
 - I. Demonstrate syringe use and care.
 - J. Give test.
 - K. Reteach, if necessary.
- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Transparency master: TM 1--Parts of a Syringe
 - D. Job sheets
 1. Job Sheet #1--Give Intramuscular Injection
 2. Job Sheet #2--Give Subcutaneous Injection
 - E. Test
 - F. Answers to test

III. Unit references:

- A. Ensminger, M. E. *Swine Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1970.
- B. Ensminger, M. E. *Sheep and Wool Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1970.
- C. *Anchor Veterinary Handbook*. St. Joseph, Missouri: Anchor Laboratories, Inc., 1977.

VACCINATION UNIT II

INFORMATION SHEET

I. Terms and definitions

- A. Vaccinate--To administer a vaccine to produce or artificially increase immunity to a particular disease
- B. Vaccine (bacterial)--Vaccine which protects against diseases caused by bacteria
- C. Vaccine (killed virus)--Vaccine produced by infecting an animal, chick embryo, or animal tissue with a specific virus which is harvested at the height of infection and subjected to killing agents

(NOTE: The dead virus stimulates the production of antibodies when injected into an animal.)
- D. Vaccine (live virus)--Vaccine produced by growing a live culture of the virus from which the vaccine is prepared
- E. Vaccine (modified live virus)--Vaccine made by altering a disease-producing agent by growing it in another host or reducing virulence of virus
- F. Vaccine (monovalent)--Vaccine which produces only one disease immunity
- G. Vaccine (polyvalent)--Vaccine which produces immunity against two or more diseases
- H. Vaccine (viral)--Vaccine which protects against diseases caused by viruses
- I. Serum--Fluid portion of blood without the cells or the clotting factors

(NOTE: Serum is obtained from animals immune to the disease and injected into other animals in order to give passive immunity.)

II. Do's and don'ts of vaccination

- A. Use sterile needles and syringes
- B. Follow label directions

(NOTE: Don't overdose or underdose.)
- C. Use proper injection site
- D. Throw away partially empty bottles if left unrefrigerated during use
- E. Don't expose live virus vaccine to sunlight

INFORMATION SHEET

- F. Don't vaccinate slaughter animals within 21 days of slaughter
- G. Change needles after each animal

(NOTE: This is especially important in areas where anaplasmosis is a problem.)

III. Parts of syringe (Transparency 1)

- A. Plunger shaft
- B. Packing
- C. Palm rest
- D. Dosage nut
- E. Barrel
- F. Barrel case
- G. Tip or hub

IV. Syringe use and care

(NOTE: Boiling is the most satisfactory method of sterilization.)

- A. Dismantle syringe and boil 10 minutes

(NOTE: After boiling syringe parts, use glycerin to lubricate the packing.)

- B. Cool and reassemble syringe carefully to avoid contamination

(NOTE: Chemical sterilization with alcohol or other disinfectants is unsatisfactory for instruments to be used for administering modified live virus vaccines.)

- C. Draw back plunger shaft and tighten packings

(NOTE: Turn palm rest clockwise until packing fits firm enough to inside of barrel that liquid can be drawn into needle.)

- D. Run dosage nut back to top of shaft

(NOTE: At this point, syringe barrel contains air between plunger and needle.)

- E. Insert needle through bottle stopper and inject air into bottle

INFORMATION SHEET

- F. Turn bottle in vertical position and slowly draw liquid from bottle until desired dosage is obtained



(NOTE: Remove remaining air in syringe.)

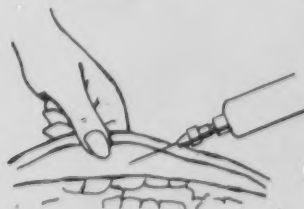
- G. Remove syringe from bottle
H. Reset dosage nut to desired dosage

(NOTE: Sharpen or discard needle if it dulls or gets a burr.)

V. Types of injections

- A. Subcutaneous (Sub Q)--Insert needle under the skin and discharge dosage

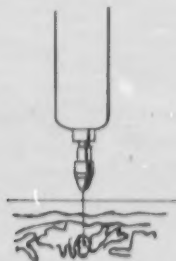
(NOTE: This type of injection can be used in any area where the skin fits loosely.)



INFORMATION SHEET

- B. Intramuscular (IM)--Insert needle deeply into large muscle

(NOTE: Use a needle at least 3/4 inch in length.)



- C. Intravenous (IV)--Insert needle into the vein with point toward the heart

(NOTE: Use a 14 or 16 gauge, 1 1/2" or 2" needle.)

- D. Intraperitoneal (IP)--Insert needle into right side of animal at a point in the center of the triangle formed by the loin, last rib, and a line from the top of the last rib to the hip bone

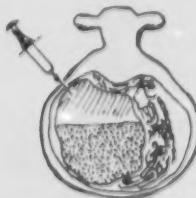
(NOTE: Use a 14 or 16 gauge, 2 1/2" or 3" needle.)



- E. Intramammary (IMM)--Depress teat to open sphincter muscle, insert sterile canula, and force medication into teat canal

- F. Intraruminal (IR)--Insert needle through left side at a point in the center of the triangle formed by the loin, last rib, and a line from the top of the last rib to the hip bone

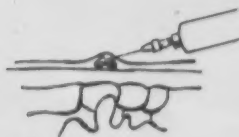
(NOTE: Use 14 gauge, 3" needle.)



INFORMATION SHEET

G. Intradermal (ID)--Inject needle into skin

(NOTE: Shave hair prior to injection. Injection should raise a blister. Use a 20 to 26 gauge needle.)



VI. Injection sites

A. Subcutaneous (Sub Q)

1. Cattle



2. Sheep



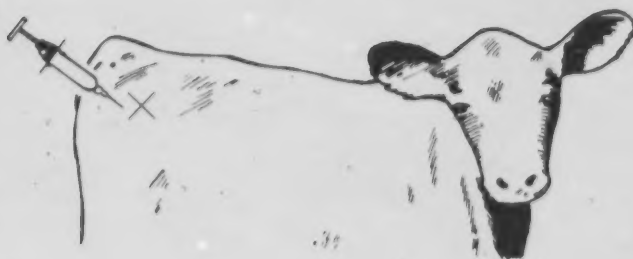
INFORMATION SHEET

3. Swine



B. Intramuscular (IM)

1. Cattle



2. Sheep



3. Swine



INFORMATION SHEET

C. Intravenous (IV)



D. Intraperitoneal (IP)



E. Intramammary (IMM)



F. Intraruminal (IR)



INFORMATION SHEET

G. Intradermal (ID)



VII. Recommended vaccination times

(NOTE: These recommendations are generalized. Specific programs must be tailored to your area and individual needs.)

A. Blackleg and other clostridium infections (Sub Q or IM)

1. Calves--Four to six months of age
2. Replacement heifers--Six to twelve months of age
3. Feedlot cattle--Within forty-eight hours of arrival
4. Sheep--Two to four weeks before shearing, castrating, and docking

(NOTE: In sheep, unlike cattle, infection through ingestion is rare; it usually follows some sort of injury.)

B. Vibriosis (IM)

1. Replacement heifers--Six to twelve months of age
2. Cow herd--Three to six weeks prior to breeding
3. Sheep--Two to four weeks before breeding

C. Leptospirosis (IM)

1. Calves--Four to six months of age
2. Replacement heifers--Six to twelve months of age
3. Cow herd--Three to six weeks prior to breeding
4. Sows and gilts--Two to four weeks before breeding or at weaning
5. Ewes--Two to four weeks before breeding
6. Feedlot cattle--Within forty-eight hours of arrival

. INFORMATION SHEET

D. Red nose (IM)

1. Replacement heifers--Six to twelve months of age
2. Cow herd--Three to six weeks prior to breeding
3. Feedlot cattle--Within forty-eight hours of arrival

E. Enterotoxemia (Sub Q)

(NOTE: This is called *sudden death* in cattle and *overeating* or *pulpy kidney disease* in sheep.)

1. Cow herd--Three to six weeks prior to calving
2. Ewes--Two to four weeks before lambing
3. Lambs--Two weeks before putting in feedlot

(NOTE: Give second injection at an interval of not less than four weeks. Six months after the second injection, a booster dose is sometimes necessary.)

F. Erysipelas (Sub Q or IM)

1. Sows--Four to six weeks before farrowing
2. Pigs--Four to six weeks of age or weaning

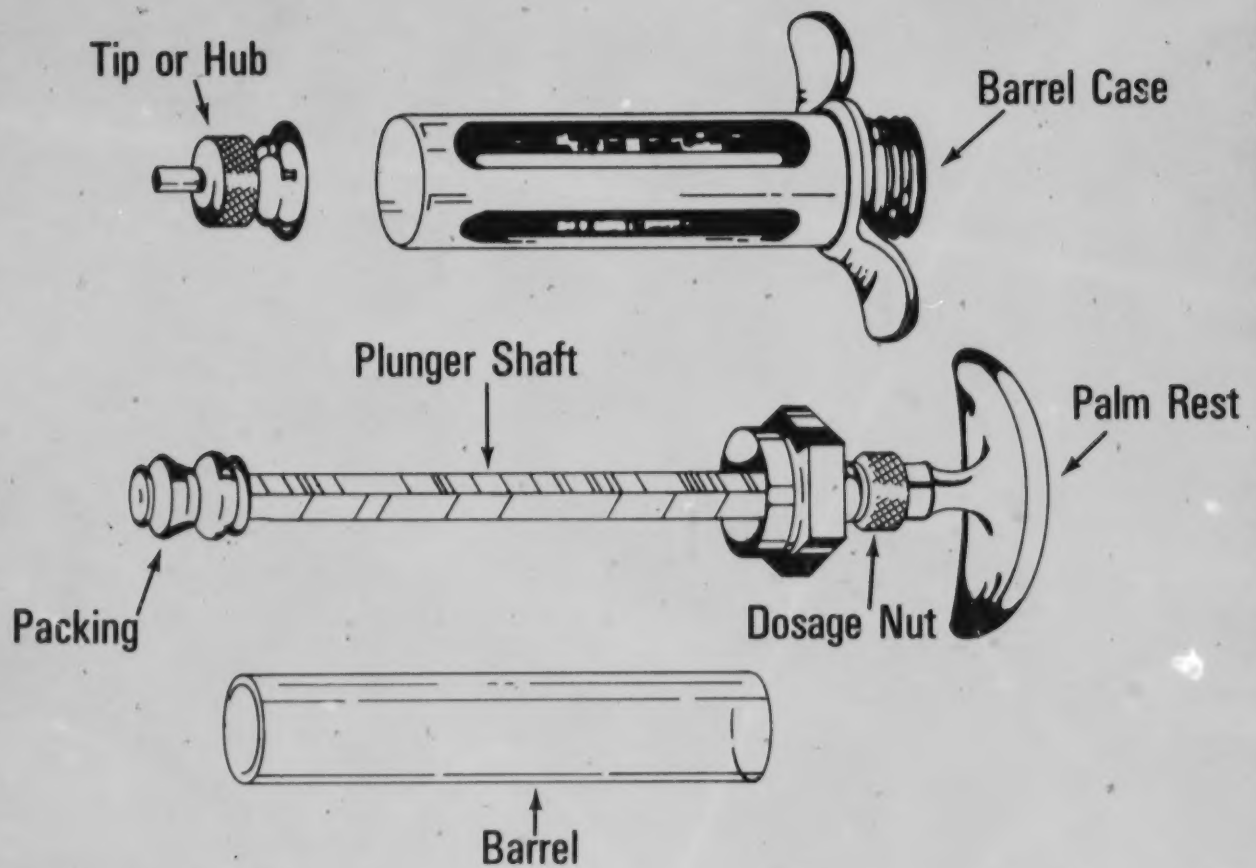
G. Anemia (IM)--Pigs--Two to four days of age

H. Staph mastitis (IM)

1. Cows--Three to six weeks before calving
2. Cows--Four to five months after calving

(NOTE: This vaccine is generally given only in a dairy health program.)

Parts of a Syringe



VACCINATION
UNIT II

JOB SHEET #1--GIVE INTRAMUSCULAR INJECTION

- I. Tools and equipment
 - A. Sterile syringe with 16 gauge, 1-inch needle
 - B. Weaning pig
 - C. Antibiotic
 - D. Means of restraint
 - E. Alcohol
- II. Procedure
 - A. Restrain animal
 - B. Draw recommended amount of antibiotic into syringe
(NOTE: Check label directions for amount of dosage.)
 - C. Cleanse injection site with alcohol (Figure 1)

FIGURE 1



(NOTE: Other injection sites may be used, but this is the most common area.)

- D. Insert needle into injection site and discharge dosage (Figure 2)
(NOTE: Insert needle its full length into the muscle.)

FIGURE 2



JOB SHEET #1

E. Massage injection site to distribute antibiotic

VACCINATION
UNIT II

JOB SHEET #2--GIVE SUBCUTANEOUS INJECTION

I. Tools and equipment

- A. Sterile syringe with a 16 gauge, 3/4-inch needle
- B. Calf
- C. Blackleg vaccine
- D. Means of restraint
- E. Alcohol

II. Procedure

- A. Restrain animal
- B. Draw recommended amount of vaccine into syringe
(NOTE: Check label directions for amount of dosage.)
- C. Cleanse injection site with alcohol (Figure 1)

FIGURE 1



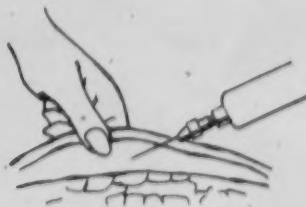
(NOTE: Other injection sites may be used, but this is the most common area.)

JOB SHEET #2

- D. Pick up skin, insert needle through skin, and discharge dosage (Figure 2)

(NOTE: Be sure dosage is deposited between skin and muscle; otherwise, the knot at the site of injection will not be absorbed.)

FIGURE 2



- E. Massage injection site to distribute vaccine

VACCINATION UNIT II

UNIT TEST

NAME _____ SCORE _____

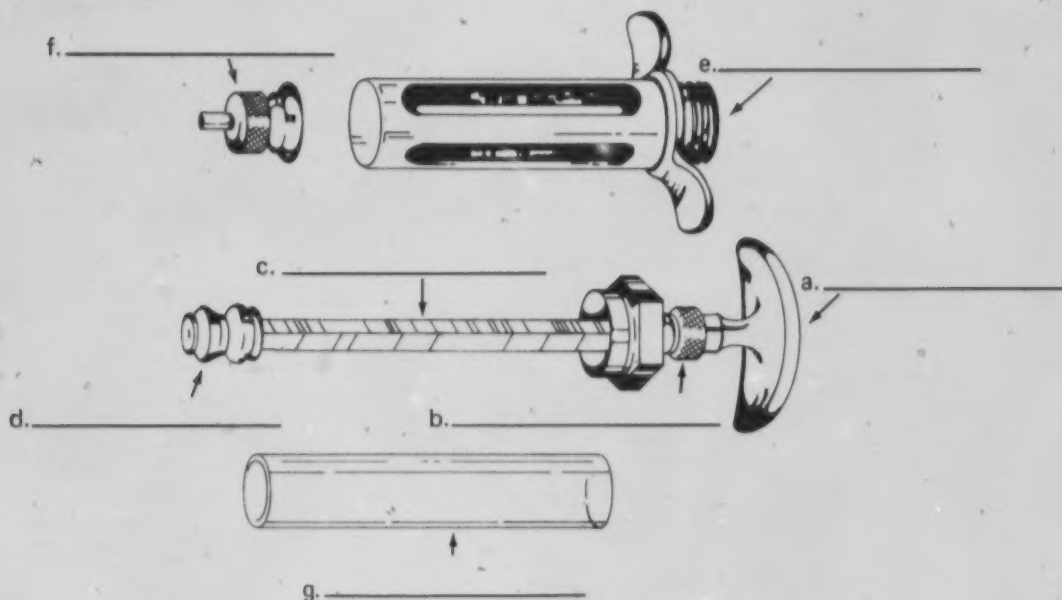
1. Match the terms on the right to the correct definitions.

- | | |
|--|----------------------------------|
| _____ a. Vaccine produced by growing a live culture of the virus from which the vaccine is prepared | 1. Vaccine (viral) |
| _____ b. Vaccine made by altering a disease-producing agent by growing it in another host or reducing virulence of virus | 2. Vaccine (polyvalent) |
| _____ c. Vaccine produced by infecting an animal, chick embryo, or animal tissue with a specific virus which is harvested at the height of infection and subjected to killing agents | 3. Vaccine (monovalent) |
| _____ d. Vaccine which produces only one disease immunity | 4. Vaccine (modified live virus) |
| _____ e. Vaccine which protects against diseases caused by bacteria | 5. Vaccine (live virus) |
| _____ f. Vaccine which produces immunity against two or more diseases | 6. Vaccine (killed virus) |
| _____ g. To administer a vaccine to produce or artificially increase immunity to a particular disease | 7. Vaccine (bacterial) |
| _____ h. Vaccine which protects against diseases caused by viruses | 8. Vaccinate |
| _____ i. Fluid portion of blood without the cells or the clotting factors | 9. Serum |

2. Select from the list below the do's and don'ts of vaccination. Place an "X" by the correct answer.

- _____ a. Don't expose live virus vaccine to sunlight
- _____ b. Use needle size that comes with syringe
- _____ c. Sterilize with alcohol when using modified live virus vaccine
- _____ d. Use sterile needles and syringes
- _____ e. Change needles after each animal

- _____ f. Store partially used bottles in a warm, dry place
 - _____ g. Follow label directions
 - _____ h. Don't vaccinate slaughter animals within 21 days of slaughter
 - _____ i. Use proper injection site
 - _____ j. Throw away partially empty bottles if left unrefrigerated during use
3. Identify the following parts of a syringe by writing the correct name in the blank provided.



4. Arrange in order the steps for syringe use and care. Place a "1" in front of the first step, a "2" in front of the second step, and so on.
- _____ a. Run dosage nut back to top of shaft
 - _____ b. Turn bottle in vertical position and slowly draw liquid from bottle until desired dosage is obtained
 - _____ c. Reset dosage nut to desired dosage
 - _____ d. Remove syringe from bottle
 - _____ e. Insert needle through bottle stopper and inject air into bottle
 - _____ f. Cool and reassemble syringe carefully to avoid contamination
 - _____ g. Draw back plunger shaft and tighten packings
 - _____ h. Dismantle syringe and boil 10 minutes

5. Match types of injections on the right to the correct descriptions.

- | | |
|---|--------------------|
| _____ a. Insert needle into right side of animal at a point in the center of the triangle formed by the loin, last rib, and a line from the top of the last rib to the hip bone | 1. Subcutaneous |
| _____ b. Depress teat to open the sphincter muscle, insert sterile canula, and force medication into teat canal | 2. Intramuscular |
| _____ c. Insert needle into the vein with point toward the heart | 3. Intravenous |
| _____ d. Insert needle through left side at a point in the center of the triangle formed by the loin, last rib, and a line from the top of the last rib to the hip bone | 4. Intraperitoneal |
| _____ e. Insert needle deeply into large muscle | 5. Intramammary |
| _____ f. Insert needle under the skin and discharge dosage | 6. Intraruminal |
| _____ g. Inject needle into skin | 7. Intradermal |

6. Identify the injection sites below and on the following page by writing the correct number in the blanks provided. (Some answers may be used more than once.)

- | | |
|--------------------|-----------------|
| 1. Subcutaneous | 5. Intramammary |
| 2. Intramuscular | 6. Intradermal |
| 3. Intravenous | 7. Intraruminal |
| 4. Intraperitoneal | |



a. _____



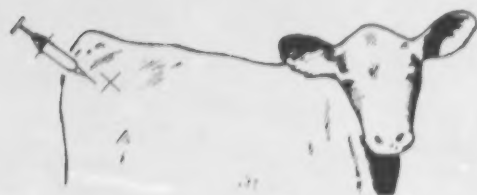
b. _____



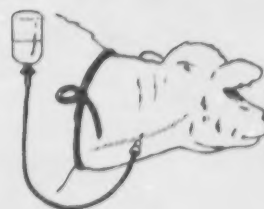
c. _____



d. _____



e. _____



f. _____



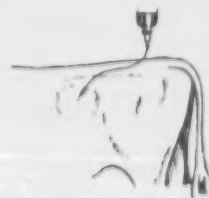
g. _____



h. _____



i. _____



j. _____

7. List the proper vaccination time for the following common diseases.

a. Blackleg and other clostridium infections (Sub Q or IM)

- 1) Calves-- _____
- 2) Replacement heifers-- _____
- 3) Feedlot cattle-- _____
- 4) Sheep-- _____

b. Vibriosis (IM)

- 1) Replacement heifers-- _____
- 2) Cow herd-- _____
- 3) Sheep-- _____

c. Leptospirosis (IM)

- 1) Calves-- _____
- 2) Replacement heifers-- _____
- 3) Cow herd-- _____
- 4) Sows-- _____
- 5) Ewes-- _____
- 6) Feedlot cattle-- _____

d. Red nose (IM)

- 1) Replacement heifers-- _____
- 2) Cow herd-- _____
- 3) Feedlot cattle-- _____

e. Enterotoxemia (Sub Q)

- 1) Cow herd-- _____
- 2) Ewes-- _____
- 3) Lambs-- _____

f. Erysipelas (Sub Q or IM)

- 1) Sows-- _____
- 2) Pigs-- _____

- g. Anemia (IM) Pigs-- _____
- h. Staph mastitis (IM)
 - 1) Cows-- _____ before calving
 - 2) Cows-- _____ after calving

8. Demonstrate the ability to:

- a. Give intramuscular injection.
- b. Give subcutaneous injection.

(NOTE: If these activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

VACCINATION
UNIT II

ANSWERS TO TEST

1. a. 5
b. 4
c. 6
d. 3
e. 7
f. 2
g. 8
h. 1
i. 9
2. a, d, e, g, h, i, j
3. a. Palm rest
b. Dosage nut
c. Plunger shaft
d. Packing
e. Barrel case
f. Tip or hub
g. Barrel
4. a. 4
b. 6
c. 8
d. 7
e. 5
f. 2
g. 3
h. 1

- 5. a. 4
 - b. 5
 - c. 3
 - d. 6
 - e. 2
 - f. 1
 - g. 7
- 6. a. 5
 - b. 6
 - c. 1
 - d. 2
 - e. 2
 - f. 3
 - g. 4
 - h. 1
 - i. 1
 - j. 7
- 7. a. Blackleg and other clostridium infections (Sub Q or IM)
 - 1) Calves--Four to six months of age
 - 2) Replacement heifers--Six to twelve months of age
 - 3) Feedlot cattle--Within forty-eight hours after arrival
 - 4) Sheep--Two to four weeks before shearing, castrating, and docking
- b. Vibriosis (IM)
 - 1) Replacement heifers--Six to twelve months of age
 - 2) Cow herd--Three to six weeks prior to breeding
 - 3) Sheep--Two to four weeks before breeding

- c. Leptospirosis (IM)
 - 1) Calves--Four to six months of age
 - 2) Replacement heifers--Six to twelve months of age
 - 3) Cow herd--Three to six weeks prior to breeding
 - 4) Sows and gilts--Two to four weeks before breeding or at weaning
 - 5) Ewes--Two to four weeks before breeding
 - 6) Feedlot cattle--Within forty-eight hours of arrival
 - d. Red nose (IM)
 - 1) Replacement heifers--Six to twelve months of age
 - 2) Cow herd--Three to six weeks prior to breeding
 - 3) Feedlot cattle--Within 48 hours of arrival
 - e. Enterotoxemia (Sub Q)
 - 1) Cow herd--Three to six weeks prior to calving
 - 2) Ewes--Two to four weeks before lambing
 - 3) Lambs--Two weeks before putting in feedlot
 - f. Erysipelas (Sub Q or IM)
 - 1) Sows--Four to six weeks before farrowing
 - 2) Pigs--Four to six weeks of age or weaning
 - g. Anemia--Pigs--Two to four days of age
 - h. Staph mastitis (IM)
 - 1) Cows--Three to six weeks before calving
 - 2) Cows--Four to five months after calving
8. Performance skills evaluated to the satisfaction of the instructor.

LIVESTOCK CASTRATION UNIT III

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to castrate cattle, swine, and sheep. This knowledge will be evidenced through completion of job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with livestock castration to the correct definitions.
2. Name the advantages of livestock castration.
3. List the precautions that should be taken in livestock castration.
4. Select from a list safety factors to observe in working livestock.
5. Identify the tools used in castration of livestock.
6. Match tools used in castration to their proper use.
7. List the proper ages at which cattle, swine, and sheep should be castrated.
8. Name methods for restraining livestock for castration.
9. Match species of livestock to the correct method of castration.
10. Demonstrate the ability to:
 - a. Castrate cattle using knife method.
 - b. Castrate swine using knife method.
 - c. Castrate sheep using elastrator method.

LIVESTOCK CASTRATION UNIT III

SUGGESTED ACTIVITIES

I. Suggested activities for instructor:

- A. Provide student with objective sheet.
- B. Provide student with information and job sheets.
- C. Make transparency.
- D. Discuss unit and specific objectives.
- E. Discuss information sheet.
- F. Demonstrate and discuss procedures outlined in the job sheets.
- G. Invite local veterinarian or rancher to review contents of unit and demonstrate castrating procedures.

(NOTE: Make copy of unit to share with resource person prior to class session.)

- H. Pass actual castrating tools to student during class.
- I. Review methods of restraining livestock with student prior to doing job sheets.
- J. Play a motivational game (e.g. Hollywood Squares with large class or Tic-Tac-Toe with small class) to review for test.
- K. Give test.
- L. Reteach, if necessary.

II. Instructional materials:

- A. Objective sheet
- B. Information sheet
- C. Transparency master: TM 1--Tools Used in Castration
- D. Job sheets
 - 1. Job Sheet #1--Castrate Cattle Using Knife Method
 - 2. Job Sheet #2--Castrate Swine Using Knife Method
 - 3. Job Sheet #3--Castrate Sheep Using Elastrator Method

E. Test

F. Answers to test

III. Unit references:

- A. Ensminger, M. E. *Beef Cattle Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1976.
- B. Ensminger, M. E. *The Stockman's Handbook*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1962.
- C. Leahy, John, and Barrow, Pat. *Restraint of Animals*. Ithaca, New York: Leahy and Barrow, 1951.

LIVESTOCK CASTRATION
UNIT III

INFORMATION SHEET

- I. Terms and definitions
 - A. Testicle--Primary male sex organ
 - B. Castration--Removal of the testicles
 - C. Scrotum--Outside protective covering of the testicles
 - D. Rupture (hernia)--Protrusion of the intestines through an opening in abdominal wall
 - E. Cryptorchid--Abnormal male sex development in which one or both of the testicles are retracted into the abdomen
 - F. Spermatic cord--Cord that suspends the testicles within the scrotum
- II. Advantages of livestock castration
 - A. Produces higher quality of meat
 - B. Makes livestock easier to handle
 - C. Brings higher prices at market
 - D. Prevents breeding
- III. Precautions that should be taken in castration
 - A. Prevent infection
(NOTE: Use an injection of antibiotic and a good disinfectant at castration.)
 - B. Prevent parasites
Examples: Screwworms, maggots

(NOTE: Select time of year when parasite population is low. Use a wound dressing at castration.)
 - C. Control stress

(NOTE: Beware of nervous conditions such as a pig with a quivering tail or ear. Castrate during mild weather and only castrate healthy animals. Be sure not to overexcite.)

INFORMATION SHEET

D. Control blood loss

(NOTE: Don't overexcite the animal. Use blood stopper for excessive bleeding. An emasculator or burdizzo are bloodless methods of castration.)

E. Watch for abnormal scrotum

Examples: Rupture, cryptorchid

(NOTE: Pigs with abnormal scrotums should be operated on by a veterinarian.)

IV. Safety factors to observe in working livestock

A. Handle and restrain animals with care to prevent injury to animal or anyone present

(NOTE: Use proper facilities and equipment when working livestock.)

B. Stay back out of the way to avoid being stepped on or kicked

(NOTE: Most animals reach farther to the rear, not so far to the front, and very little to the sides.)

C. Use a knife that will not close and is easy to handle

V. Tools used in castration (Transparency 1)

A. Knife

B. Single-edge razor blade

C. Burdizzo

D. Elastrator

E. Emasculator

F. Scalpel

INFORMATION SHEET

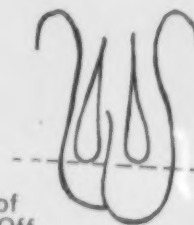
VI. Proper use of tools used in castration

- A. Knife, scalpel, or single-edge razor blade--Slits scrotum and cuts spermatic cord

(NOTE: Scrotum may be slit down the sides or the lower third can be removed.)



Side Slit Next to Leg

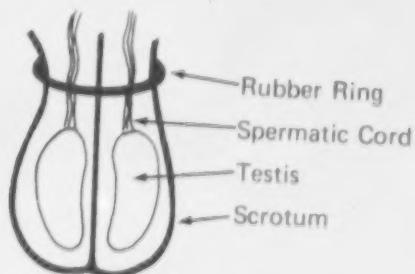


Lower Third of Scrotum Cut Off

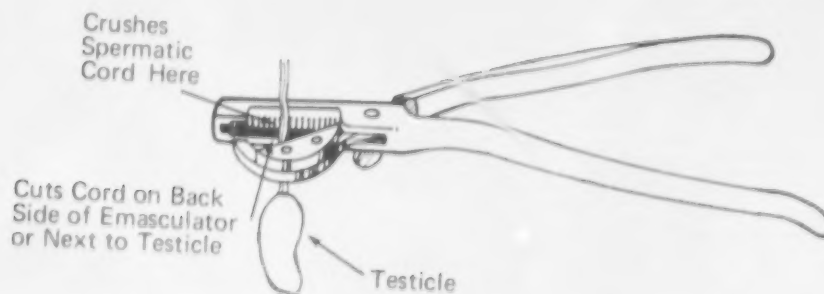
- B. Burdizzo--Crushes each spermatic cord for bloodless castration

(NOTE: This may be demonstrated by putting a piece of string within a folded piece of paper. The burdizzo will cut through the string [spermatic cord], but does not damage the paper [scrotum].)

- C. Elastrator--Stretches an especially made rubber ring over scrotum and testicles, which causes the tissue to die



- D. Emasculator--Crushes a part of the spermatic cord while cutting, thus lessening the loss of blood



INFORMATION SHEET

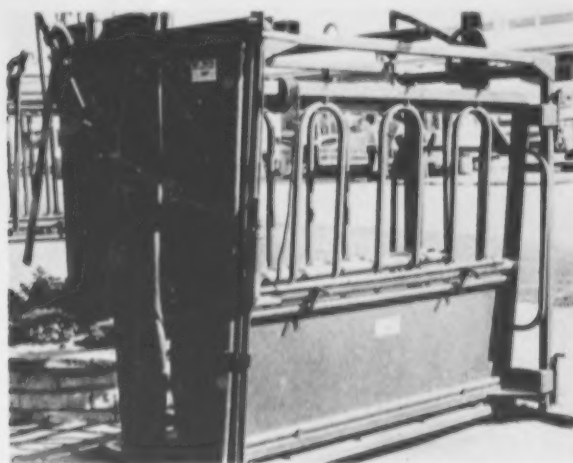
VII. Proper age for livestock castration

- A. Cattle--Birth to 12 weeks of age
- B. Swine--Early enough to heal before weaning
- C. Sheep--7 to 14 days of age

(NOTE: These are ideal ages. Animals castrated later in life will have an increase in stress and blood loss.)

VIII. Methods for restraining livestock for castration

A. Headgate



B. Calf cradle

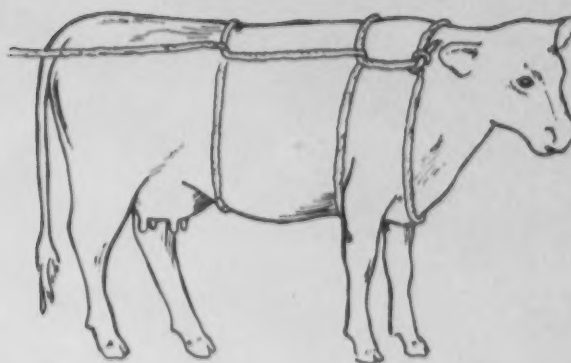


INFORMATION SHEET

C. Manual



D. Rope



IX. Methods of castration

A. Cattle

1. Knife
2. Burdizzo
3. Elastrator

B. Swine--Knife

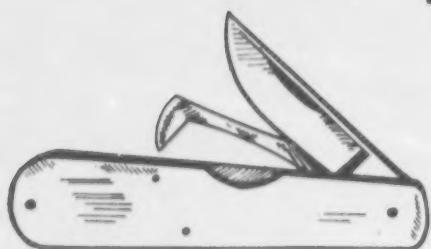
INFORMATION SHEET

C. Sheep

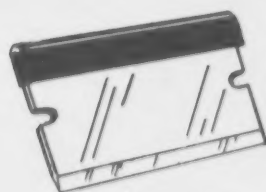
1. Knife
2. Burdizzo
3. Elastrator

(NOTE: A scalpel or single-edge razor blade may be used instead of a knife.)

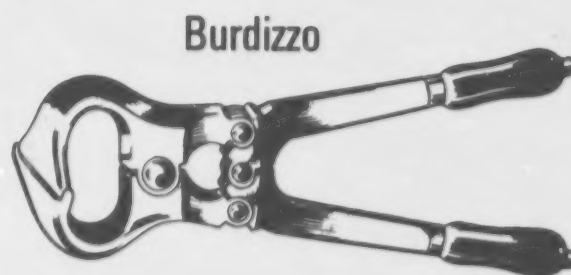
Tools Used in Castration



Knife



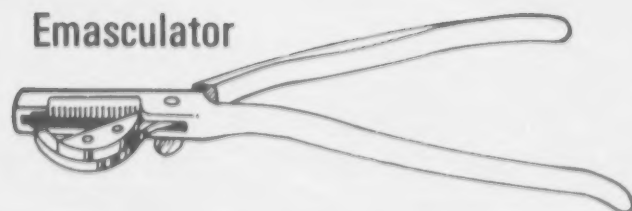
Single-edge
Razor Blade



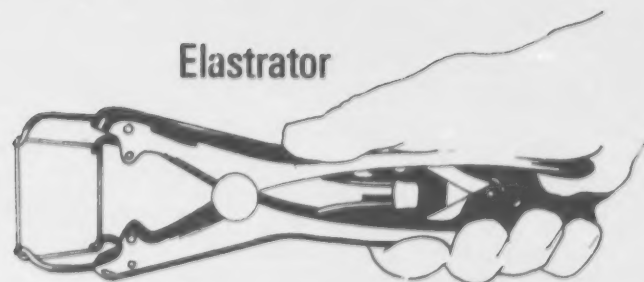
Burdizzo



Scalpel



Emasculator



Elastrator

LIVESTOCK CASTRATION UNIT III

JOB SHEET #1--CASTRATE CATTLE USING KNIFE METHOD

I. Tools and equipment

A. Disinfectant

Examples: Lysol, creosote, iodine

B. Knife

C. Wound dressing

D. Means of restraint

Examples: Manually, calf cradle, headgate with calf standing

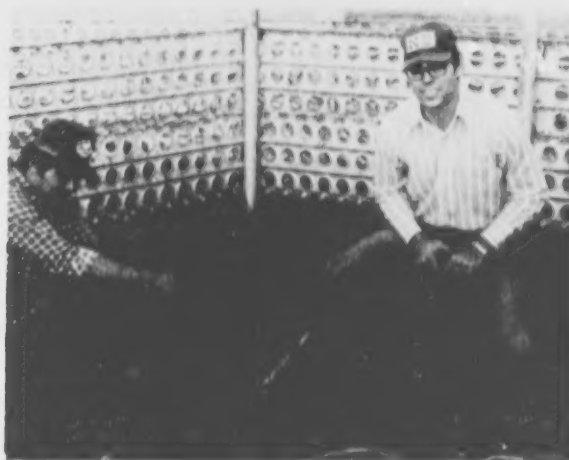
E. Syringe of antibiotic

(NOTE: Read antibiotic label to determine type and amount of injection.)

II. Procedure

A. Restrain calf (Figure 1)

FIGURE 1



B. Wash hands and knife with disinfectant

C. Wash and disinfect scrotum

JOB SHEET #1

- D. Remove lower one-third of scrotum with knife (Figure 2)

FIGURE 2



- E. Pull testicles out of scrotum one at a time and scrape spermatic cord at least three inches above each testicle (Figure 3)

FIGURE 3



- F. Check animal for excessive bleeding
G. Apply wound dressing according to label directions
H. Give antibiotic according to label directions

LIVESTOCK CASTRATION UNIT III

JOB SHEET #2-CASTRATE SWINE USING KNIFE METHOD

I. Tools and equipment

A. Disinfectant

Examples: Lysol, creosote

B. Knife

C. Wound dressing

D. Syringe of antibiotic

(NOTE: Read antibiotic label to determine type and amount of injection.)

E. Means of restraint (Figure 1a or Figure 1b)

II. Procedure

A. Restrain pig (Figure 1a or 1b)

FIGURE 1a



FIGURE 1b



B. Wash hands and knife with disinfectant

C. Wash and disinfect scrotum

JOB SHEET #2

- D. Hold testicle between the thumb and index finger (Figure 2)
- E. Push testicle to the crotch area of pig near the base of ham
(NOTE: Incision made too high toward the tail will not drain properly.)
- F. Make incision on the scrotum parallel to the testicle (Figure 2)

FIGURE 2



- G. Remove testicle and scrape or pull spermatic cord out
- H. Repeat the procedure on the second testicle
- I. Check for excessive bleeding
- J. Apply wound dressing according to label directions
- K. Give antibiotic according to label directions

LIVESTOCK CASTRATION UNIT III

JOB SHEET #3--CASTRATE SHEEP USING ELASTRATOR METHOD

I. Tools and equipment

- A. Elastrator with band
- B. Means of restraint (Figure 1)
- C. Syringe of antibiotic

(NOTE: Use antibiotic on larger lambs. Follow label directions for amount and type of injection.)

II. Procedure

- A. Restrain lamb (Figure 1)
- B. Place band on elastrator
- C. Open elastrator and place band over scrotum with teeth of elastrator pointed toward lamb (Figure 1)

FIGURE 1



- D. Push both testicles down into scrotum; release band
- E. Check to be sure both testicles are in scrotum with band between lamb and testicles

(NOTE: Make sure you don't get a teat under the band.)

LIVESTOCK CASTRATION
UNIT III

TEST

NAME _____ SCORE _____

1. Match the terms on the right to the correct definitions.

- _____ a. Protrusion of the intestines through an opening in the abdominal wall
- _____ b. Abnormal male sex development in which one or both of the testicles are retracted into the abdomen
- _____ c. Removal of the testicles
- _____ d. Outside protective covering of the testicles
- _____ e. Cord that suspends the testicles within the scrotum
- _____ f. Primary male sex organ

- 1. Castration
- 2. Testicle
- 3. Scrotum
- 4. Rupture (hernia)
- 5. Cryptorchid
- 6. Spermatic cord

2. Name four advantages of livestock castration.

- a. _____
- b. _____
- c. _____
- d. _____

3. List five precautions that should be taken in livestock castration.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

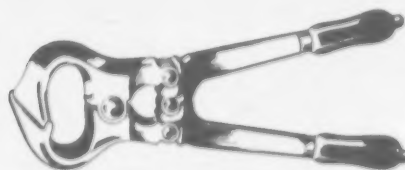
4. Select from the list below the safety factors to observe in working livestock.

- _____ a. Castrate during the hot part of the day while the animals are inactive
- _____ b. Handle and restrain animals with care to prevent injury to animal or anyone present
- _____ c. Use a knife that will close and is easy to handle
- _____ d. Stay back out of the way to avoid being stepped on or kicked

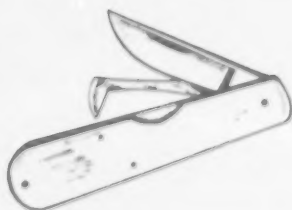
5. Identify the following tools used in castration of livestock by writing the correct name in the blank provided.



a. _____



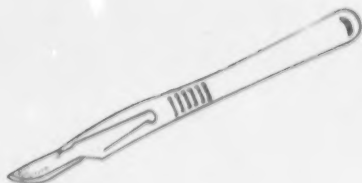
b. _____



c. _____



d. _____



e. _____ f. _____

6. Match the tools used in castration on the right to their proper use. (Answers may be used more than once.)

_____ a. Crushes a part of the spermatic cord while cutting, thus lessening the loss of blood

_____ b. Crushes each spermatic cord for bloodless castration

_____ c. Stretches an especially made rubber ring over scrotum and testicles, which causes the tissue to die

_____ d. Slits scrotum and cuts spermatic cord

1. Knife

2. Burdizzo

3. Emasculator

4. Elastrator

5. Single-edge razor blade

6. Scalpel

7. List the proper ages at which cattle, swine, and sheep should be castrated.

a. Cattle-- _____

b. Swine-- _____

c. Sheep-- _____

8. Name four methods for restraining livestock for castration.

a. _____

b. _____

c. _____

d. _____

9. Match the species of livestock on the right to the correct method of castration. (Answers may be used more than once.)

_____ a. Knife

1. Cattle

_____ b. Burdizzo

2. Sheep

_____ c. Elastrator

3. Swine

10. Demonstrate the ability to:

- a. Castrate cattle using knife method.
- b. Castrate swine using knife method.
- c. Castrate sheep using elastrator method.

(NOTE: If the above activities have not been accomplished prior to the test, ask your instructor when they should be completed.)

LIVESTOCK CASTRATION
UNIT III

ANSWERS TO TEST

1. a. 4
b. 5
c. 1
d. 3
e. 6
f. 2
2. a. Produces higher quality of meat
b. Makes livestock easier to handle
c. Brings higher prices at market
d. Prevents breeding
3. a. Prevent infection
b. Prevent parasites
c. Control stress
d. Control blood loss
e. Watch for abnormal scrotum
4. b, d
5. a. Elastrator
b. Burdizzo
c. Knife
d. Emasculator
e. Scalpel
f. Single-edge razor blade

6. a. 3
b. 2
c. 4
d. 1, 5, 6
7. a. Cattle--Birth to 12 weeks of age
b. Swine--Early enough to heal before weaning
c. Sheep--7 to 14 days of age
8. a. Headgate
b. Calf cradle
c. Manual
d. Rope
9. a. 1, 2, 3
b. 1, 2
c. 1, 2
10. Performance skills evaluated to the satisfaction of instructor

DEHORNING UNIT IV

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to dehorn cattle. This knowledge will be evidenced through completion of the job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Define terms associated with dehorning.
2. Name the advantages of dehorning.
3. Select from a list precautions that should be taken in dehorning.
4. Identify the different types of dehorners.
5. Match the types of dehorners to their proper use.
6. Name different methods for restraining livestock for dehorning.
7. Distinguish between chemical and mechanical dehorning.
8. Select from a list factors that determine the method of dehorning to use.
9. Name ways to stop bleeding after dehorning.
10. Demonstrate the ability to:
 - a. Dehorn cattle using clippers or Barnes dehorner.
 - b. Dehorn cattle using spoon or tube.
 - c. Dehorn cattle using caustic stick or paste.

DEHORNING UNIT IV

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information and job sheets.
 - C. Make transparency.
 - D. Discuss unit and specific objectives.
 - E. Discuss information sheet.
 - F. Display dehorning tools during class.
 - G. Demonstrate and discuss procedures outlined in the job sheets.
 - H. Teach restraining unit prior to this unit.
 - I. Invite local veterinarian or rancher to review contents of unit and demonstrate dehorning procedures.

(NOTE: Make copy of unit to share with resource person prior to class session.)
 - J. Give test.
 - K. Reteach if necessary.

- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Transparency master: TM 1--Tools Used in Dehorning
 - D. Job sheets
 1. Job Sheet #1--Dehorn a Calf Using Clippers or Barnes Dehorner
 2. Job Sheet #2--Dehorn a Calf Using Spoon or Tube
 3. Job Sheet #3--Dehorn a Calf Using Caustic Stick or Paste

III. Unit references:

- A. Ensminger, M. E. *Beef Cattle Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1976.
- B. Ensminger, M. E. *The Stockman's Handbook*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1962.

DEHORNING
UNIT IV

INFORMATION SHEET

I. Terms and definitions

- A. Dehorning--Removing horns from livestock
- B. Scurs--Small horns which are inherited or caused by improper dehorning

II. Advantages of dehorning

- A. Higher prices at market
- B. Less chance of injury to handler or other cattle
- C. Less feed and shed space needed
- D. More rapid weight gain in feeder cattle

(NOTE: Cattle do not waste energy by fighting around feed bunk as much after being dehorned.)

III. Precautions that should be taken in dehorning

- A. Disinfect equipment before and after each use to prevent disease
- B. Perform operation carefully to prevent scurs
- C. Dehorn cattle early in life
- D. Dehorn cattle in early spring or late fall

(NOTE: The time of year is especially important in an area where screw-worms or maggots may exist.)

IV. Types of dehorners (Transparency 1)

- A. Hot iron
- B. Spoon
- C. Tube
- D. Elastrator
- E. Barnes
- F. Saw
- G. Clippers
- H. Caustic stick or paste

INFORMATION SHEET

V. Proper use of tools used in dehorning (Transparency 1)

- A. Hot iron--Is applied to the horn of young calves under five months of age
- B. Spoon or tube--Gouges out horns of young calves up to 60 days of age
- C. Elastrator--Stretches an especially made rubber ring over the horn well down into the hairline

(NOTE: The elastrator is probably the least desirable method.)

- D. Saw, clippers, and Barnes--Remove the horn with about 1/4 to 1/2 inch of the skin to make certain that horn-forming cells are destroyed on calves over four months of age

(NOTE: This is the most common method used.)

- E. Caustic stick or paste--Prevents horn growth if applied when calf is three to ten days old; does not remove horns

VI. Methods for restraining livestock for dehorning

- A. Headgate
- B. Calf cradle
- C. Manually
- D. Rope

VII. Dehorning

- A. Chemical--Stopping horn growth with caustic stick or paste
- B. Mechanical--Removing of horns by the use of mechanical equipment

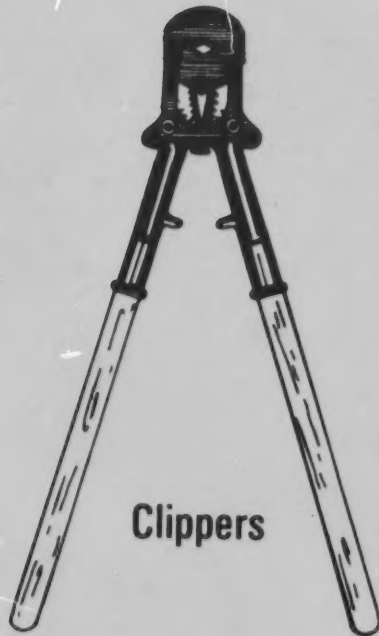
VIII. Factors determining which dehorning method to use

- A. Age of animal
- B. Size of horns
- C. Available equipment
- D. Available labor

INFORMATION SHEET

- IX. Ways to stop bleeding after dehorning
- A. Use blood stopper
 - B. Pack horn cavity with cotton
 - C. Pull main artery on underside of cut
 - D. Sear wound with hot iron

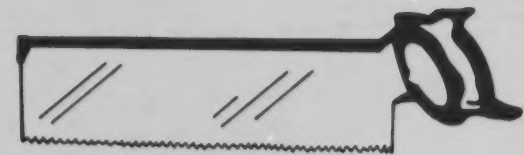
Types of Dehorers



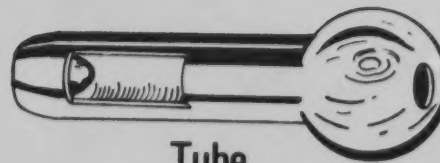
Clippers



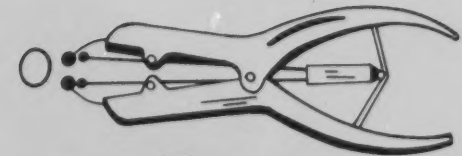
Spoon



Saw



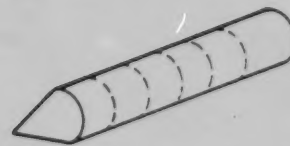
Tube



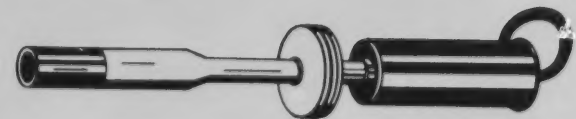
Elastrator



Barnes



Caustic Stick or Paste



Hot Iron

DEHORNING
UNIT IVJOB SHEET #1--DEHORN A CALF USING CLIPPERS
OR BARNES DEHORNER

- I. Tools and equipment
 - A. Disinfectant
 - B. Clippers or Barnes dehorner
 - C. Forceps
 - D. Blood stopper
 - E. Wound dressing such as EQ335
 - F. Syringe of antibiotic

(NOTE: Read antibiotic label to determine type and amount of injection.)

- G. Cotton
 - H. Method of restraint
 - I. Hot iron

II. Procedure

- A. Restrain calf

(NOTE: Make sure you do not choke calf down during dehorning.)

- B. Inspect horns to determine size of dehorner to use

(NOTE: The dehorner is of proper size if it will remove 1/4" to 1/2" of the skin around the horn base. Clippers and Barnes dehorner are most commonly used on younger cattle. See Figures 1a and 1b. Saws are sometimes used on mature cattle because their horns are more brittle.)

- C. Wash hands and dehorner with disinfectant

JOB SHEET #1

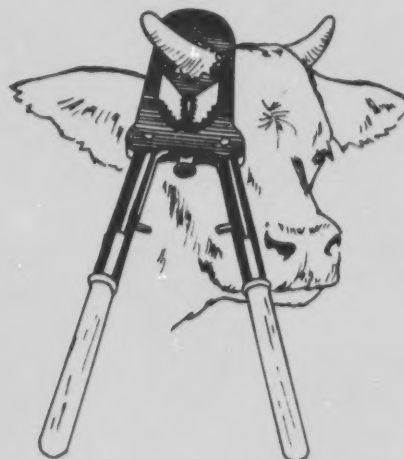
- D. Open dehorners and place straight over horn so you can make an even cut, removing 1/4 to 1/2 inch of the skin around the horn base (Figures 1a and 1b)

(NOTE: When using a saw, remove 1/4 to 1/2 inch of the skin from around the horn base with a sawing action.)

FIGURE 1a



FIGURE 1b



- E. Close dehorners quickly to remove horn

- F. Control excessive bleeding

1. Pull artery with forceps until it breaks

(NOTE: The broken artery will retract and go back into the soft tissue thus stopping the bleeding. If you cannot pull the artery, use a hot iron to sear the wound.)

2. Apply cotton to horn cavity when cavity is large

3. Apply blood stopper

- G. Repeat procedure for second horn

- H. Check animal for excessive bleeding

- I. Apply wound dressing according to label directions

- J. Give antibiotic according to label directions

(NOTE: Place animal in shelter during bad weather.)

DEHORNING
UNIT IV

JOB SHEET #2--DEHORN A CALF USING SPOON OR TUBE

I. Tools and equipment

- A. Disinfectant
- B. Spoon or tube

(NOTE: Dehorning tubes come in four sizes. All four sizes should be available.)

- C. Forceps
- D. Blood stopper
- E. Cotton
- F. Wound dressing such as EQ335
- G. Syringe of antibiotic
- H. Method of restraint

II. Procedure

- A. Restrain the calf
- B. Select a sharp tube of proper size to fit over base of the horn and include 1/8 inch of skin all the way around
- C. Place cutting edge straight down over the horn (Figure 1)

FIGURE 1



JOB SHEET #2

- D. Push and twist, first one way and then the other, until the skin has been cut through

(NOTE: A cut from 1/8 to 3/8 inch deep is required. A greater depth is necessary with calves three months of age. Going deeper than necessary will cause excessive bleeding.)

- E. Turn tube to about a 45-degree angle and shove and turn the cutting edge until the bottom comes off

- F. Control excessive bleeding

1. Pull artery with forceps until it breaks

(NOTE: The broken artery will retract and go back into the soft tissue. If you cannot pull the artery, sear the wound with a hot iron.)

2. Apply blood stopper

- G. Repeat procedure for second horn

- H. Check animal for excessive bleeding

- I. Apply wound dressing according to label directions

- J. Give antibiotic according to label directions

(NOTE: Place animal in shelter during bad weather.)

DEHORNING
UNIT IV

JOB SHEET #3--DEHORN A CALF USING CAUSTIC STICK OR PASTE

- I. Tools and equipment
 - A. Caustic stick or paste
 - B. Scissors
 - C. Petroleum jelly
 - D. Cloth
 - E. Method of restraint

II. Procedure

- A. Restrain calf
- B. Remove hair around horn (Figure 1)
- C. Smear a heavy ring of petroleum jelly around clipped area (Figure 1)

(NOTE: The petroleum jelly keeps the caustic from running into the calf's eye.)

Hair Clipped and
Grease Applied



FIGURE 1

- D. Rub the caustic material over the horn with the cloth until blood appears
- (NOTE: This should be done carefully; otherwise, some horn cells may not be destroyed and a scur may develop.)
- E. Remove calf from dam for a few hours to prevent damage to cow's udder
- F. Protect calf from rain for one day following application

DEHORNING
UNIT IV

TEST

NAME _____ SCORE _____

1. Define the following terms.

- a. Dehorning-- _____

- b. Scurs-- _____

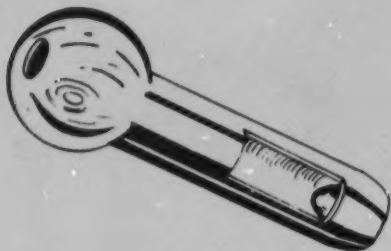
2. Name four advantages of dehorning.

- a. _____
- b. _____
- c. _____
- d. _____

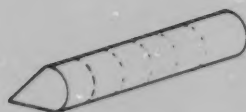
3. Select from the list below precautions that should be taken in dehorning. Place an "X" by the correct answer.

- _____ a. Disinfect equipment before and after each use to prevent disease
- _____ b. Dehorn cattle in early summer or late winter
- _____ c. Dehorn cattle as yearlings
- _____ d. Dehorn cattle in early spring or late fall
- _____ e. Dehorn cattle early in life
- _____ f. Perform operation hurriedly to prevent shock
- _____ g. Perform operation carefully to prevent scurs

4. Identify the following types of dehorners.



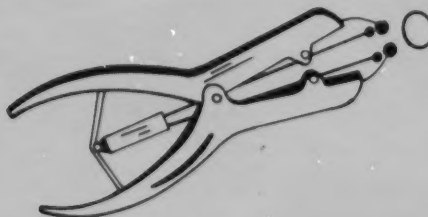
a. _____



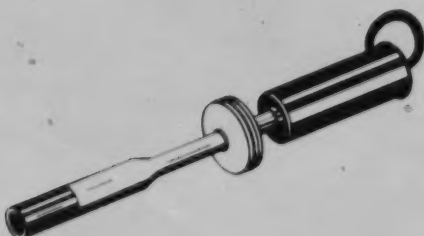
b. _____



c. _____



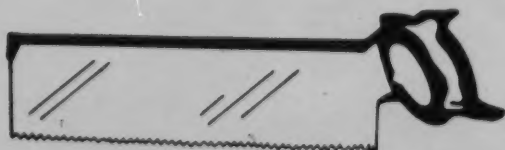
d. _____



e. _____



f. _____



g. _____



h. _____

5. Match the types of dehorner on the right to their proper use.

- | | |
|--|------------------------------|
| _____ a. Gouges out horns of young calves up to 60 days of age | 1. Caustic stick or paste |
| _____ b. Stretches an specially made rubber ring over the horn well down into the hairline | 2. Hot iron |
| _____ c. Is applied to the horn of young calves under five months of age | 3. Saw, clippers, and Barnes |
| _____ d. Removes the horn with about 1/4 to 1/2 inch of the skin to make certain that horn-forming cells are destroyed on calves over four months of age | 4. Spoon or tube |
| _____ e. Prevents horn growth if applied when calf is three to ten days old; does not remove horns | 5. Elastrator |

6. Name four methods for restraining livestock for dehorning.

- a. _____
- b. _____
- c. _____
- d. _____

7. Distinguish between chemical and mechanical dehorning by placing an "X" by the chemical dehorning method.

- _____ a. Removing of horns by the use of mechanical equipment
- _____ b. Stopping horn growth with caustic stick or paste

8. Select from the list below the factors that determine the method of dehorning to use.

- _____ a. Age of animal
- _____ b. Available equipment
- _____ c. Sex of the animal
- _____ d. Available labor
- _____ e. Bone structure
- _____ f. Size of horns

9. Name four ways to stop bleeding after dehorning.

- a. _____
- b. _____
- c. _____
- d. _____

10. Demonstrate the ability to:

- a. Dehorn cattle using clippers or Barnes dehorner.
- b. Dehorn cattle using spoon or tube.
- c. Dehorn cattle using caustic stick or paste.

(NOTE: If these activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

DEHORNING
UNIT IV

ANSWERS TO TEST

1. a. Removing horns from livestock
b. Small horns which are inherited or caused by improper dehorning
2. a. Higher prices at market
b. Less chance of injury to handler or other cattle
c. Less feed and shed space needed
d. More rapid weight gain in feeder cattle
3. a, d, e, g
4. a. Tube
b. Caustic stick or paste
c. Barnes
d. Elastrator
e. Hot iron
f. Clippers
g. Saw
h. Spoon
5. a. 4
b. 5
c. 2
d. 3
e. 1
6. a. Headgate
b. Calf cradle
c. Manually
d. Rope

7. b
8. a, b, d, f
9. a. Use blood stopper
b. Pack horn cavity with cotton
c. Pull main artery on underside of cut
d. Sear wound with hot iron
10. Performance skills evaluated to the satisfaction of instructor

**DOCKING
UNIT V****UNIT OBJECTIVE**

After completion of this unit, the student should be able to demonstrate the ability to dock a lamb. This knowledge will be evidenced through completion of the job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with docking to the correct definitions.
2. Select from a list advantages of docking.
3. Discuss the precautions that should be taken in docking.
4. Identify tools used in docking.
5. Match tools used in docking to their proper use.
6. Demonstrate the ability to:
 - a. Dock lambs using the elastrator.
 - b. Dock lambs using the burdizzo.
 - c. Dock lambs using the chisel or pincher.

DOCKING
UNIT V

SUGGESTED ACTIVITIES

I. Suggested activities for instructor:

- A. Provide student with objective sheet.
- B. Provide student with information and job sheets.
- C. Make transparency.
- D. Discuss unit and specific objectives.
- E. Discuss information sheet.
- F. Teach unit along with castration unit.

(NOTE: Lambs can be castrated and docked at the same time.)

- G. Review methods of restraining sheep prior to doing the job sheets.
- H. Review injection sites and types of injections prior to doing job sheets.
- I. Demonstrate and discuss procedures outlined in the job sheets.
- J. Demonstrate treatment of a prolapsed rectum using live animal or illustrations.

- 1. Insert 1/2" x 6" threaded plastic coupling into rectum.
- 2. Pull out the prolapse as far as it will come.
- 3. Put an elastrator band over coupling and tissue that is sticking out, as close to the body as possible.

(NOTE: Tissue will rot off or may be cut off after a few days and then coupling can be removed.)

- K. Give test.
- L. Reteach if necessary.

II. Instructional materials:

- A. Objective sheet
- B. Information sheet
- C. Transparency master: TM 1--Tools Used in Docking

D. Job sheets

1. Job Sheet #1--Dock Lambs Using the Elastrator
2. Job Sheet #2--Dock Lambs Using the Burdizzo
3. Job Sheet #3--Dock Lambs Using the Chisel or Pincher

E. Test

F. Answers to test

- III. Unit reference--Ensminger, M. E. *Sheep and Wool Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1970.

DOCKING
UNIT V

INFORMATION SHEET

- I. Terms and definitions
 - A. Docking--Removal of the sheep's tail
 - B. Prolapse of the rectum--Protrusion from the anus in varying degrees
 - C. Tetanus (lock jaw)--Wound infection disease that attacks the nervous system
- II. Advantages of docking
 - A. Docked lambs are cleaner
 - B. Long tails interfere with breeding ewes
 - C. Docked lambs present a more uniform and blocky appearance
 - D. Docked lambs bring higher market prices
 - E. Dressed carcass has a more attractive appearance
- III. Precautions that should be taken in docking
 - A. To prevent infection
 - 1. Use injection of antibiotic at docking
 - 2. Use good disinfectant at docking
 - 3. Give a tetanus vaccination

(NOTE: All lamb surgery should be accompanied with tetanus anti-toxin.)
 - B. To prevent parasites

Examples: Screwworms, maggots

 - 1. Dock lamb in early spring or late fall
 - 2. Use wound dressing on wound
 - C. To control blood loss
 - 1. Use blood stopper for excessive bleeding
 - 2. Select a bloodless method of docking

INFORMATION SHEET

3. Dock lambs at 7 to 14 days of age

D. To prevent prolapse of rectum--Do not dock too high

IV. Tools used in docking (Transparency 1)

A. Chisel

B. Emasculator

C. Elastrator

D. Pincher

E. Burdizzo

F. Knife

V. Proper use of tools used in docking (Transparency 1)

A. Chisel or pincher--Sears wound which results in less blood loss and less danger of infection than with a knife, but wound heals more slowly

B. Emasculator--Crushes a part of tissue while cutting, thus lessening the loss of blood

C. Elastrator--Stretches an especially made rubber ring which is placed around the tail

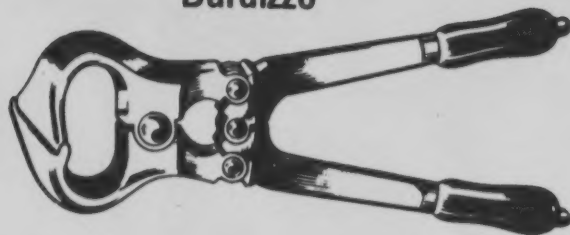
D. Burdizzo--Closes jaws over the tail so that tail inside of the closed jaws can be cut off with knife

Tools Used in Docking

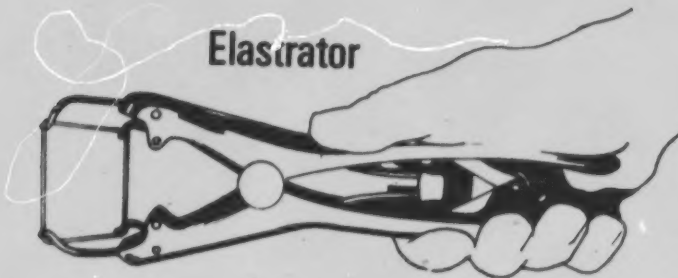
Chisel (With Burlap)



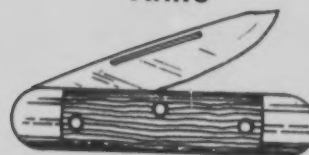
Burdizzo



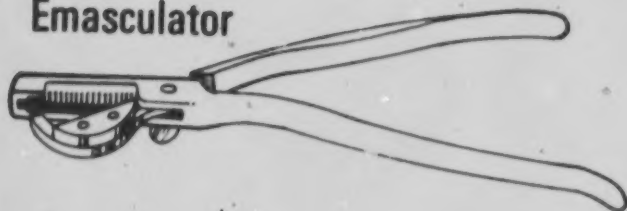
Elasticator



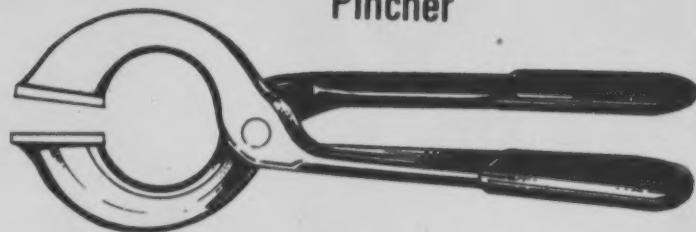
Knife



Emasculator



Pincher



DOCKING
UNIT V

JOB SHEET #1--DOCK LAMBS USING THE ELASTRATOR

I. Tools and equipment

- A. Elastator with band
- B. Means of restraint
- C. Syringe of tetanus antitoxin

(NOTE: Follow label directions for amount and type of injection.)

II. Procedure

- A. Restrain animal (Figure 1)
- B. Draw the tail through the ring of elastator (Figure 1)

FIGURE 1



- C. Release ring at desired severing point

(NOTE: The desired severing point is usually about one inch from the body as measured on the underside of the tail. Show sheep are docked closer.)

- D. Give tetanus antitoxin according to label directions

DOCKING UNIT V

JOB SHEET #2--DOCK LAMBS USING THE BURDIZZO

I. Tools and equipment

- A. Means of restraint
- B. Burdizzo
- C. Knife
- D. Disinfectant

Examples: 5% solution of carbolic acid; iodine and water

- E. Syringe of tetanus antitoxin

(NOTE: Follow label directions for amount and type of injection.)

II. Procedure

- A. Restrain lamb (Figure 1)

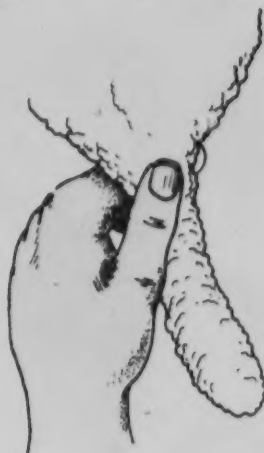
FIGURE 1



JOB SHEET #2

- B. Wash hands, burdizzo, and tail of lamb with disinfectant
- C. Push skin back toward lamb's body
- D. Place burdizzo on tail at point where tail is to be severed and close the burdizzo (Figure 2)

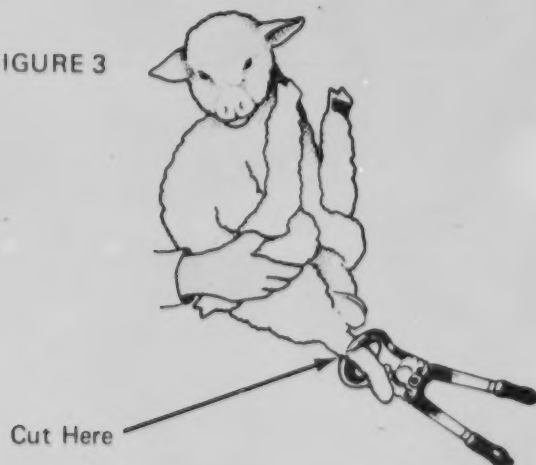
FIGURE 2



(NOTE: The desired severing point is usually about one inch from the body as measured on the underside of the tail. Show sheep are docked closer.)

- E. Cut tail off between the closed jaws of the burdizzo with knife (Figure 3)

FIGURE 3



- F. Remove tail and leave burdizzo in place for a few minutes to prevent bleeding
- G. Give tetanus antitoxin according to label directions

DOCKING
UNIT V

JOB SHEET #3--DOCK LAMBS USING THE CHISEL OR PINCHER

I. Tools and equipment

A. Board with a slot in the end (Figure 1)

Example: 6" x 6" with a 1" x 1" slot in the end

B. Method of heating chisel or pincher

C. Wound dressing, such as EQ335

D. Syringe of tetanus antitoxin

II. Procedure

A. Heat chisel or pincher

(NOTE: Do not heat instruments beyond a very dull red color.)

B. Protect lamb's buttocks by placing tail in slot of board (Figure 1)

FIGURE 1



C. Sever the tail quickly

(NOTE: Avoid any more burning than necessary to prevent bleeding.)

D. Apply wound dressing according to label directions

E. Give antibiotic according to label directions

DOCKING
UNIT V

TEST

NAME _____ SCORE _____

1. Match the terms on the right to the correct definitions.

- | | |
|--|---------------------------|
| _____ a. Removal of the sheep's tail | 1. Prolapse of the rectum |
| _____ b. Protrusion from the anus in varying degrees | 2. Tetanus (lock jaw) |
| _____ c. Wound infection disease that attacks the nervous system | 3. Docking |

2. Select from the list below the advantages of docking.

- _____ a. Docked lambs are cleaner
- _____ b. Long tails on rams interfere with breeding
- _____ c. Dressed carcass has a more attractive appearance
- _____ d. Docked lambs are resistant to prolapse
- _____ e. Docked lambs bring higher market prices
- _____ f. Docked lambs present a more uniform and blocky appearance

3. Discuss the precautions that should be taken in docking.

a. To prevent infection

- 1) _____
- 2) _____
- 3) _____

b. To prevent parasites

- 1) _____
- 2) _____

c. To control blood loss

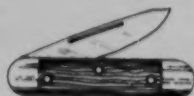
- 1) _____
- 2) _____
- 3) _____

d. To prevent prolapse of rectum-- _____

4. Identify the following tools used in docking.



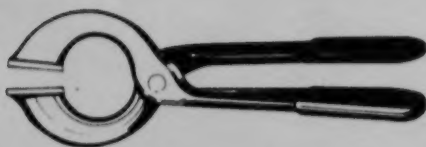
a. _____



b. _____



c. _____



d. _____



e. _____



f. _____

5. Match the tools on the right to their proper use.

_____ a. Closes jaws over the tail so that tail inside of the closed jaws can be cut off with knife

_____ b. Stretches an especially made rubber ring which is placed around the tail

_____ c. Crushes a part of tissue while cutting, thus lessening the loss of blood

_____ d. Sears wound which results in less blood loss and less danger of infection than with a knife, but wound heals more slowly

1. Emasculator

2. Elastrator

3. Chisel or pincher

4. Burdizzo

6. Demonstrate the ability to:

a. Dock lambs using the elastrator.

b. Dock lambs using the burdizzo.

c. Dock lambs using the chisel or pincher

(NOTE: If these activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

DOCKING UNIT V

ANSWERS TO TEST

1. a. 3
b. 1
c. 2
2. a, c, e, f
3. Discussion should include:
 - a. To prevent infection
 - 1) Use injection of antibiotic at docking
 - 2) Use good disinfectant at docking
 - 3) Give a tetanus vaccination
 - b. To prevent parasites
 - 1) Dock lamb in early spring or late fall
 - 2) Use wound dressing on wound
 - c. To control blood loss
 - 1) Use blood stopper for excessive bleeding
 - 2) Select a bloodless method of docking
 - 3) Dock lambs at 7 to 14 days of age
 - d. To prevent prolapse of rectum--Do not dock too high
4. a. Elastrator
b. Knife
c. Chisel
d. Pincher
e. Emasculator
f. Burdizzo

- 5. a. 4
- b. 2
- c. 1
- d. 3

6. Performance skills evaluated to the satisfaction of instructor.

GROWTH STIMULANTS UNIT VI

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to administer growth stimulants. This knowledge will be evidenced through completion of job sheet and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with growth stimulants to the correct definitions.
2. Distinguish between the advantages and disadvantages of using growth stimulants.
3. Name methods of administering growth stimulants.
4. Name causes of improper implants.
5. Select from the list methods other than growth stimulants that improve rate and efficiency of gain.
6. Complete a chart by naming the growth stimulant when given the factors to consider in choosing the proper growth stimulant for cattle.
7. Complete a chart by naming the growth stimulant when given the factors to consider in choosing the proper growth stimulant for sheep.
8. Demonstrate the ability to implant cattle and sheep.

GROWTH STIMULANTS UNIT VI

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information and job sheets.
 - C. Discuss unit and specific objectives.
 - D. Discuss information sheet.
 - E. Demonstrate and discuss procedures outlined in the job sheets.
 - F. Use farmer, rancher, or veterinarian as resource person.
 - G. Collect samples of each growth stimulant to exhibit to class.
 - H. Give test.
 - I. Reteach if necessary.
- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Job Sheet #1--Implant Cattle and Sheep
 - D. Test
 - E. Answers to test
- III. Unit references:
 - A. Ensminger, M. E. *Beef Cattle Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1976.
 - B. Ensminger, M. E. *Sheep and Wool Science*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1970.

GROWTH STIMULANTS UNIT VI

INFORMATION SHEET

- I. Terms and definitions
 - A. Growth stimulant--Feed additive given to promote rate and efficiency of gain
 - B. Implant--Placement of growth stimulant into the ear
 - C. Estrus--Period during which female is receptive to courtship and copulation
 - D. Estrogenic--Any substance that promotes the estrus cycle
 - E. Rider--Livestock that persistently rides other livestock
 - F. Buller--Livestock that other livestock pick out to ride
 - G. Cryptorchidism--Condition in which one or both testicles fail to descend normally
 - H. Short scrotum bull--Induced cryptorchidism
 - I. Testosterone--Hormone produced by testicles
- II. Advantages and disadvantages of using growth stimulants
 - A. Advantages
 1. Increase growth rate
 2. Decrease feedlot cost
 3. Lower retail price
 4. Improve feed efficiency
 5. Market sooner
 - B. Disadvantages
 1. May affect carcass quality
 2. Requires withdrawal period prior to slaughter
 3. May cause bullers or riders

(NOTE: This is caused by too rapid absorption of pellet. Pellet should be removed.)

INFORMATION SHEET

III. Methods of administering growth stimulants

- A. Oral
- B. Implant

IV. Causes of improper implants

(NOTE: A poor job of implanting can result in either inadequate effect or too rapid absorption of the pellet. Improper implants should be removed from ear and redone.)

- A. Crushing the pellet
- B. Gouging the cartilage of the ear
- C. Depositing the pellets between layers of skin
- D. Using dirty needle
- E. Placing implant too close to base of ear

V. Methods other than growth stimulants that improve rate and efficiency of gain

- A. Feed young bulls instead of steers

(NOTE: Male hormones secreted by testicles are excellent growth stimulants.)

- B. Feed short scrotum bulls

(NOTE: Although testosterone is still produced, these animals are easier to handle and may be carried to advanced ages without being labeled "bull beef.")

- C. Take advantage of genetic improvement
- D. Improve quality of rations
- E. Eliminate parasites and disease
- F. Keep abreast of new developments

VI. Factors to consider in choosing the proper growth stimulant for cattle

Growth Stimulant	Class of Cattle	Method of Administering	Increase in Daily Rate of Gain	Increase in Feed Efficiency	Effect on Carcass Quality	Other Comments	Withdrawal Period Prior to Slaughter
Antibiotic	All	Oral	6%	4%	Improves carcass quality slightly; more fat deposition and marbling.	Antibiotics will also reduce the disease level. More effective on high roughage rations than on high concentrate rations.	48 hours
Ralgro (Zeranol)	All	Implant	10%	5-10%	No effect	Nonestrogenic	65 days
Rumensin	Finishing steers and heifers	Oral	Gain not affected. Saves feed.	10%	No effect	Not a hormone. It results in more propionic acid & less butyric & acetic acids; hence, more energy.	No withdrawal required.
Stilbestrol (diethylstilbestrol)	Finishing steers and heifers	Oral Implant	10-15% 10-15%	10%	Stilbestrol produces more lean and less fat; hence, stilbestrol treated cattle must be fed to heavier weights; otherwise they will grade lower.	Simultaneous use of stilbestrol in feed and as implants is not approved. Implants are available in 12 or 15 mg pellets.	14 days Cattle must not be slaughtered for at least 120 days following implantation.
Synovex S (for steers)	Finishing steers	Implant	10-15%	5-10%	No effect		60 days
MGA	Finishing heifers	Oral	11%	8%	MGA will lower the incidence of estrus in heifers and increase rate and efficiency of gain. It is not effective with pregnant heifers.	MGA is effective for heifers, but not for steers	48 hours
Synovex H (for heifers)	Finishing heifers	Implant	10%	5-10%	No effect	Recommended for use in heifers during last 60 to 150 days of the finishing period	60 days

INFORMATION SHEET

VII. Factors to consider in choosing the proper growth stimulant for sheep

Type of Additive	Method of Administering	Daily Rate of Gain	Effect on:		Comments
			Feed Efficiency	Carcass Quality	
Stilbestrol (diethyl stilbestrol)	Feeding (oral) or implants	Av.: 10-15	Av.: 10-15	Slightly lower	At high levels, estrogens hasten skeletal maturation; thus, when given to lambs over 1 year old, there is acceleration of closing of break joints, an important factor in carcass quality.
Antibiotics	Feeding (oral)	Range: 0-31 Av.: 11	Range: 4-27 Av.: 10	No effect to slight improvement	Antibiotics will usually increase gains and feed efficiency, but not always. They will lower death losses and result in a more uniform lamb crop.
Stilbestrol & antibiotic	Feeding (oral)	Av.: 15-20	Av.: 11		Feeding a combination of antibiotic and hormone does not always improve rate of gain or feed efficiency over feeding a hormone alone.

INFORMATION SHEET

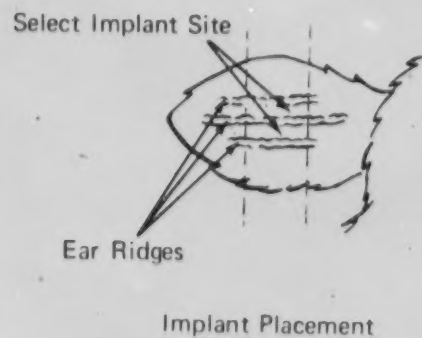
GROWTH STIMULANTS UNIT VI

JOB SHEET #1--IMPLANT CATTLE AND SHEEP

- I. Tools and equipment
 - A. Disinfectant such as alcohol
 - B. Calf or lamb
 - C. Implants
 - D. Implant gun
 - E. Method of restraint
- II. Procedure
 - A. Restrain animal
 - B. Disinfect implant gun needle
 - C. Disinfect implant site (Figure 1)

(NOTE: Implant in the back side of the ear in the area between the ridges of cartilage and lengthwise the middle one-third of the ear.)

FIGURE 1

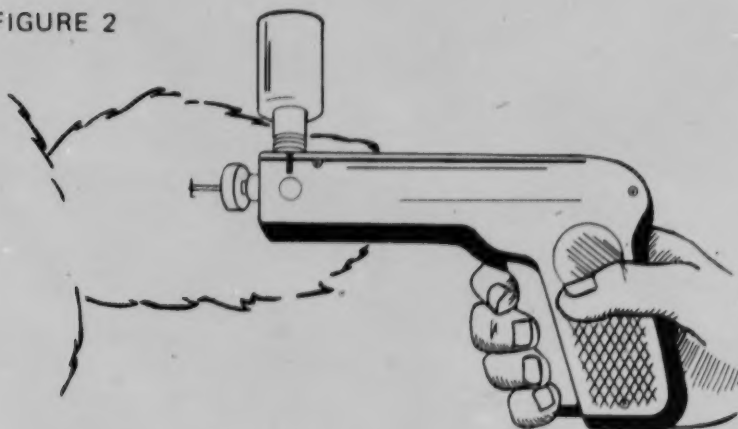


- D. Pick up skin at implant site with the point of the needle or with your fingers

JOB SHEET #1

- E. Keep needle parallel to the ear (Figure 2)

FIGURE 2



- F. Insert needle under the skin toward the base of the ear for its full length and pull needle back 1/4 inch
- G. Deposit pellets gently
- H. Feel the pellets with thumb and forefinger to insure a proper implant has been made

GROWTH STIMULANTS UNIT VI

TEST

NAME _____ SCORE _____

1. Match the terms on the right to the correct definitions.

- | | |
|--|-----------------------|
| _____ a. Any substance that promotes the estrus cycle | 1. Implant |
| _____ b. Livestock that other livestock pick out to ride | 2. Growth stimulant |
| _____ c. Induced cryptorchidism | 3. Estrogenic |
| _____ d. Hormone produced by testicles | 4. Rider |
| _____ e. Placement of growth stimulant into the ear | 5. Buller |
| _____ f. Feed additive given to promote rate and efficiency of gain | 6. Short scrotum bull |
| _____ g. Condition in which one or both testicles fail to descend normally | 7. Estrus |
| _____ h. Livestock that persistently rides other livestock | 8. Testosterone |
| _____ i. Period during which female is receptive to courtship and copulation | 9. Cryptorchidism |

2. Distinguish between the advantages and disadvantages of using a growth stimulant by placing an "A" by the advantages and a "D" by the disadvantages in the list below.

- _____ a. May affect carcass quality
- _____ b. Market sooner
- _____ c. Improve feed efficiency
- _____ d. Requires withdrawal period prior to slaughter
- _____ e. Decrease feedlot cost
- _____ f. Lower retail price
- _____ g. May cause bullers or riders
- _____ h. Increase growth rate

3. Name two methods of administering growth stimulants.

- a. _____
- b. _____

4. Name three causes of improper implants.

- a. _____
- b. _____
- c. _____

5. Select from the list below methods other than growth stimulants that improve rate and efficiency of gain. Place an "X" by the correct answers.

- _____ a. Keep abreast of new developments
- _____ b. Eliminate parasites and disease
- _____ c. Improve quality of rations
- _____ d. Take advantage of genetic improvement
- _____ e. Feed steers instead of young bulls
- _____ f. Feed short scrotum bulls

6. Complete the chart below by writing the correct growth stimulant for cattle in the blank provided.

Growth Stimulant	Class of Cattle	Method of Administering	Increase in Daily Rate of Gain	Increase in Feed Efficiency	Effect on Carcass Quality	Other Comments	Withdrawal Period Prior to Slaughter
a. _____	All	Implant	10%	5-10%	No effect	Nonestrogenic	65 days
b. _____	Finishing steers and heifers	Oral	Gain not affected. Saves feed.	10%	No effect	Not a hormone. It results in more propionic acid and less butyric and acetic acids; hence more energy.	No withdrawal required
c. _____	Finishing steers and heifers	Oral Implant	10-15% 10-15%	10%	Stilbestrol produces more lean and less fat; hence, stilbestrol treated cattle must be fed to heavier weights; otherwise they will grade lower	Simultaneous use of stilbestrol in feed and as implants is not approved. Implants are available in 12 or 15 mg pellets.	14 days Cattle must not be slaughtered for at least 120 days following implantation

7. Complete the chart below by writing the correct growth stimulant for sheep in the blanks provided.

Type of Additive	Method of Administering	Daily Rate of Gain	Effect on:		Comments
			Feed Efficiency	Carcass Quality	
a. _____	Feeding (oral) or implants	Av.: 10-15	Av.: 10-15	Slightly lower	At high levels, estrogens hasten skeletal maturation; thus, when given to lambs over 1 year old, there is acceleration of closing of break joints, an important factor in carcass quality.
b. _____	Feeding (oral)	Range: 0-31 Av.: 11	Range: 4-27 Av: 10	No effect to slight improvement.	Antibiotics will usually increase gains and feed efficiency, but not always. They will lower death losses and result in a more uniform lamb crop.

8. Demonstrate the ability to implant cattle and sheep.

(NOTE: If this activity has not been accomplished prior to the test, ask the instructor when it should be completed.)

GROWTH STIMULANTS
UNIT VI

ANSWERS TO TEST

1. a. 3
b. 5
c. 6
d. 8
e. 1
f. 2
g. 9
h. 4
i. 7
2. a. D
b. A
c. A
d. D
e. A
f. A
g. D
h. A
3. a. Oral
b. Implant
4. Any three of the following:
 - a. Crushing the pellet
 - b. Gouging the cartilage of the ear
 - c. Depositing the pellets between layers of skin
 - d. Using dirty needle
 - e. Placing implant too close to base of ear

5. a, b, c, d, f
6. a. Ralgro (Zeranol)
b. Rumensin
c. Stilbestrol (diethylstilbestrol)
7. a. Stilbestrol
b. Antibiotic
8. Performance skills evaluated to the satisfaction of instructor.

IDENTIFICATION UNIT VII

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to brand, tattoo, and noseprint livestock. This knowledge will be evidenced through completion of the assignment sheet, job sheets, and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with livestock identification to the correct definitions.
2. Identify basic tools used in livestock identification.
3. Classify methods of identification for cattle, swine, and sheep.
4. Identify common earmarks for cattle.
5. Select from a list regulations that affect registration of brands.
6. Name materials used for hot irons.
7. Select from a list tips to follow in branding.
8. Name rules to follow in ear notching pigs.
9. Ear notch pigs using the swine ear notch system.
10. Demonstrate the ability to:
 - a. Brand cattle using the hot iron method.
 - b. Tattoo a calf.
 - c. Noseprint cattle.

IDENTIFICATION
UNIT VII

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information, assignment, and job sheets.
 - C. Make transparencies.
 - D. Discuss unit and specific objectives.
 - E. Discuss information and assignment sheets.
 - F. Review methods of restraining before demonstrating job sheets.
 - G. Demonstrate and discuss procedures outlined in the job sheets.
 - H. Take field trip to demonstrate job sheets.
 - I. Play Hollywood Squares to review for test.
 - J. Give test.
 - K. Reteach, if necessary.
- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Transparency masters
 1. TM 1--Tools Used for Identification
 2. TM 2--Common Earmarks for Cattle
 - D. Assignment Sheet #1--Ear Notch Pigs Using the Swine Ear Notch System
 - E. Answers to assignment sheet
 - F. Job sheets
 1. Job Sheet #1--Brand Cattle Using the Hot Iron Method
 2. Job Sheet #2--Tattoo a Calf
 3. Job Sheet #3--Noseprint Cattle

G. Test

H. Answers to test

III. References:

- A. William, Luce G. "Managing Sow and Litter," *OSU Extension Facts*, No. 3650. Stillwater: Oklahoma State University, n.d.
- B. Rich, T. D. and Freeny, Ellis. "Livestock Branding in Oklahoma," *OSU Extension Facts*, No. 3255. Stillwater: Oklahoma State University, n.d.
- C. Rich, T. D.; Bates, Frank; and Apple, Ken. "Freeze Branding Cattle," *OSU Extension Facts*, No. 3250. Stillwater: Oklahoma State University, n.d.
- D. Rich, T. D., and Hughes, Joe. *Nose Printing*. Stillwater: Oklahoma State University/Animal Science Dept., n.d.

IDENTIFICATION
UNIT VII

INFORMATION SHEET

- I. Terms and definitions
 - A. Hot iron branding--Using a hot iron to burn a permanent scar for identification
 - B. Freeze branding (cryobranding)--Using an extremely cold iron to brand permanently
 - C. Paint branding--Using an iron coated with wet paint to temporarily brand livestock
 - D. Tattooing--Piercing the skin with instruments equipped with needle points and rubbing ink into pierced area
 - E. Tagging--Using metal or plastic tags
 - F. Noseprinting--Making an ink blot impression of the lines in the nose of cattle
(NOTE: Noseprinting works on the same principle as fingerprinting.)
 - G. Ear notching--Cutting slots in the ear for permanent identification
- II. Basic tools used in livestock identification (Transparency 1)
 - A. Electric branding iron
 - B. Tattooing pliers
 - C. Tagging pliers
 - D. Ear notching pliers
 - E. Knife
 - F. Hot iron
- III. Methods of identification
 - A. Cattle
 - 1. Hot iron branding
 - 2. Freeze branding
 - 3. Paint branding
 - 4. Tattooing

INFORMATION SHEET

- 5. Tagging
- 6. Noseprinting
- 7. Ear marking
- B. Swine
 - 1. Ear notching
 - 2. Tagging
 - 3. Tattooing
 - 4. Paint branding
- C. Sheep
 - 1. Tagging
 - 2. Tattooing
 - 3. Paint branding
- IV. Common earmarks for cattle (Transparency 2)
 - A. Underbit
 - B. Overbit
 - C. Swallow fork
 - D. Split
 - E. Bobbed or cropped
 - F. Tipped
 - G. Underslope
 - H. Overslope
 - I. Hole
- V. Regulations that affect registration of brands

(NOTE: The fee for recording brands in Oklahoma is \$5.00 and must be renewed in those years ending in zero and five.)

 - A. Western cattle states provide for recording of brands

INFORMATION SHEET

- B. Cattleman's Association Brand Division approves applications for a brand and a certificate is issued

(NOTE: Applications may be obtained from the Oklahoma Cattleman's Association, 2500 Exchange Avenue, Oklahoma City, Oklahoma; county extension offices, and county sheriff offices.)

- C. There are 13 brand locations on cattle

(NOTE: The left jaw is reserved by the state for bangs and TB brands. Two brand patterns are never duplicated in one location.)

- D. Brands should be 4 or 5 inches in length or diameter

(NOTE: Brands should be no less than 3 inches.)

- E. Registration must be confined to one brand location

(NOTE: If the brand is used in two locations, it will require an additional registration.)

- F. Two units or digits are required for registration

- G. Bill of sale should be secured when purchasing branded livestock

(NOTE: Specific brands should show on bill of sale. This is your title. You would never purchase an automobile without securing the title.)

VI. Materials used for hot irons

- A. Iron
- B. Steel
- C. Stainless steel

(NOTE: Stainless steel is noted for its ability to withstand extreme heat without burning up. Copper irons are not recommended since they can't withstand extreme heat and will burn up frequently and have to be replaced.)

VII. Tips to follow in branding

- A. Iron should be heated until it is the color of ashes
- B. Acids and other branding fluids are not recommended
- C. Brand should be the color of saddle leather

(NOTE: A rough guide to time application of an iron of the right heat should be three to five seconds. You are only trying to burn the outer layer of the skin and should burn no deeper.)

INFORMATION SHEET

- D. Iron is too hot when the hair catches fire
- E. Rocking the iron assures a burn on all parts of the brand
- F. Irons which are too hot blotch the brand and are hard to read
- G. Simple brand patterns are best
- H. Blotching occurs when two parts of an iron come together

Example: The two bars on the X concentrate heat. This is reduced by a 1/4-inch gap on the branding side of the iron where the two irons meet

- I. Four-inch iron should be used on calves
- J. Five-inch iron or larger should be used on yearlings or mature cattle
- K. Irons should have a thickness or face of 3/8 to 1/2 inch
- L. Brand area should be clipped when animals have a heavy hair coat
- M. Branding on top of any part of a previous brand is a violation of branding laws
- N. Oil or grease applied to the branded area will usually aid in smoother, faster peeling

VIII. Rules to follow in ear notching pigs (Assignment Sheet #1)

- A. Litter number is placed in the pig's right ear
- B. Pig number is placed in the pig's left ear

(NOTE: This refers to pig number within a litter.)

- C. Pigs in the same litter will have identical notches in the right ear
- D. Pigs in the same litter will have different notches in the left ear
- E. Litter of the first sow to farrow is usually designated litter number one

(NOTE: Each successive litter is assigned a number in order of farrowing. All pigs in litter number 1 will have a "1" notched in the right ear. If there were eight pigs in the litter, each pig would be notched either 1, 2, 3, 4, 5, 6, 7, or 8 in the left ear. Each pig in litter number one will have the same notch in the right ear but a different notch in the left ear.)

- F. Baby pig ear notchers should be used on pigs up to 5 weeks of age and larger ear notchers should be used on larger pigs

INFORMATION SHEET



Example: Ear-notched pig 8-5

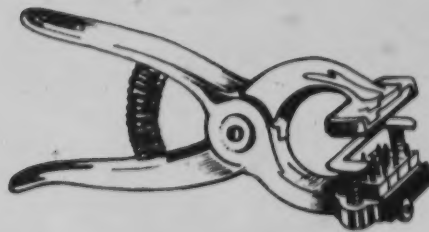
$3+3+1+1 = 8$
Litter No. 8



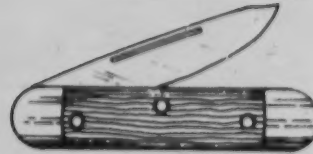
$3+1+1 = 5$
Pig No. 5

Tools Used for Identification

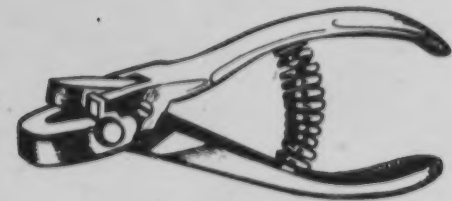
Tattooing Pliers



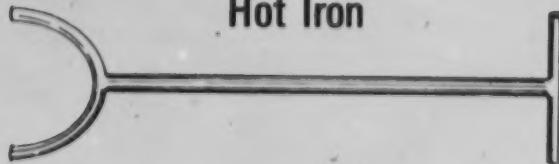
Knife



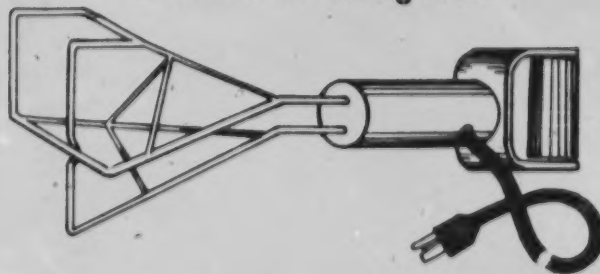
Ear Notching Pliers



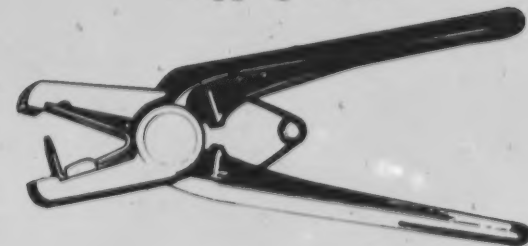
Hot Iron



Electric Branding Iron



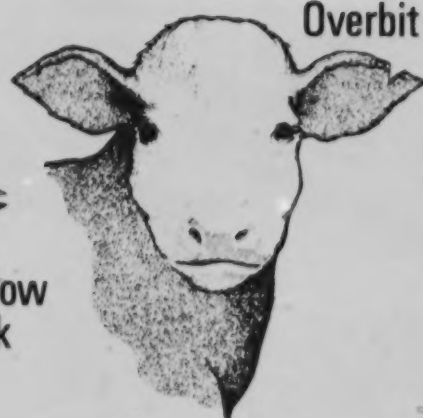
Tagging Pliers



Common Earmarks



Underbit



Overbit



Swallow
Fork



Split



Bobbed
or
Chopped



Tipped



Underslope



Hole



Overslope

IDENTIFICATION
UNIT VIIASSIGNMENT SHEET #1--EAR NOTCH PIGS USING
THE SWINE EAR NOTCH SYSTEM

Place ear notches in the proper positions on the drawings below.

1. Ear notch pig 4-5

(NOTE: The "4" is the litter number and the "5" is the pig number.)



2. Ear notch pig 26-17



3. Ear notch pig 2-7



4. Ear notch pig 11-13



5. Ear notch pig 3-6



6. Ear notch pig 16-17



ASSIGNMENT SHEET #1

7. Read the ear notch for the following pigs:

a. _____



b. _____



c. _____



IDENTIFICATION UNIT VII

ANSWERS TO ASSIGNMENT SHEET



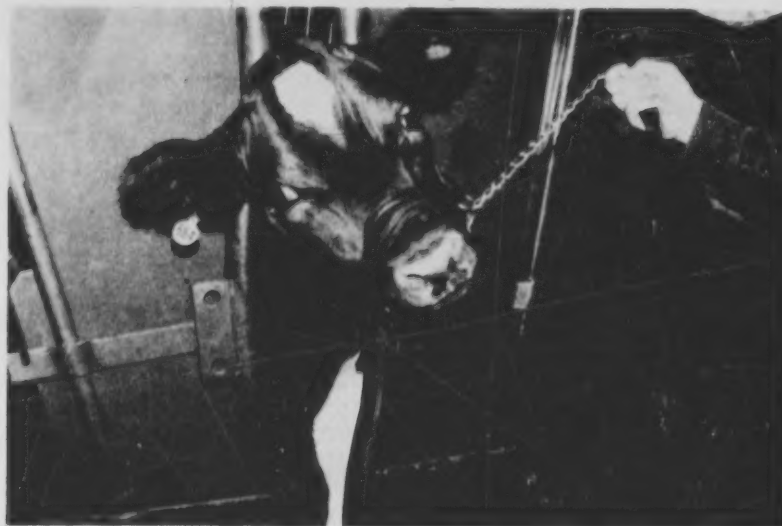
7. a. 31-8
b. 108-12
c. 13-11

IDENTIFICATION
UNIT VII

JOB SHEET #1--BRAND CATTLE USING THE HOT IRON METHOD

- I. Tools and equipment
 - A. Headgate and squeeze chute
 - B. Branding iron
 - C. Clippers
 - D. Branding iron heater
 - E. Leather gloves
 - F. Can of grease
- II. Procedure
 - A. Restrain animal in chute (Figure 1)

FIGURE 1



- B. Place iron in fire until the iron has obtained the proper heat
(NOTE: Heat iron until it is the color of ashes.)

JOB SHEET #1

- C. Clip hair on animal at desired brand location (Figure 2)

FIGURE 2



- D. Place iron on animal's skin long enough to burn the skin to a leather color
(NOTE: Be careful and not let iron slip.)
- E. Apply even pressure on branding iron and rock iron to assure a burn on all parts of the brand (Figure 3)

FIGURE 3



JOB SHEET #1

F. Apply grease to the brand

IDENTIFICATION
UNIT VII

JOB SHEET #2--TATTOO A CALF

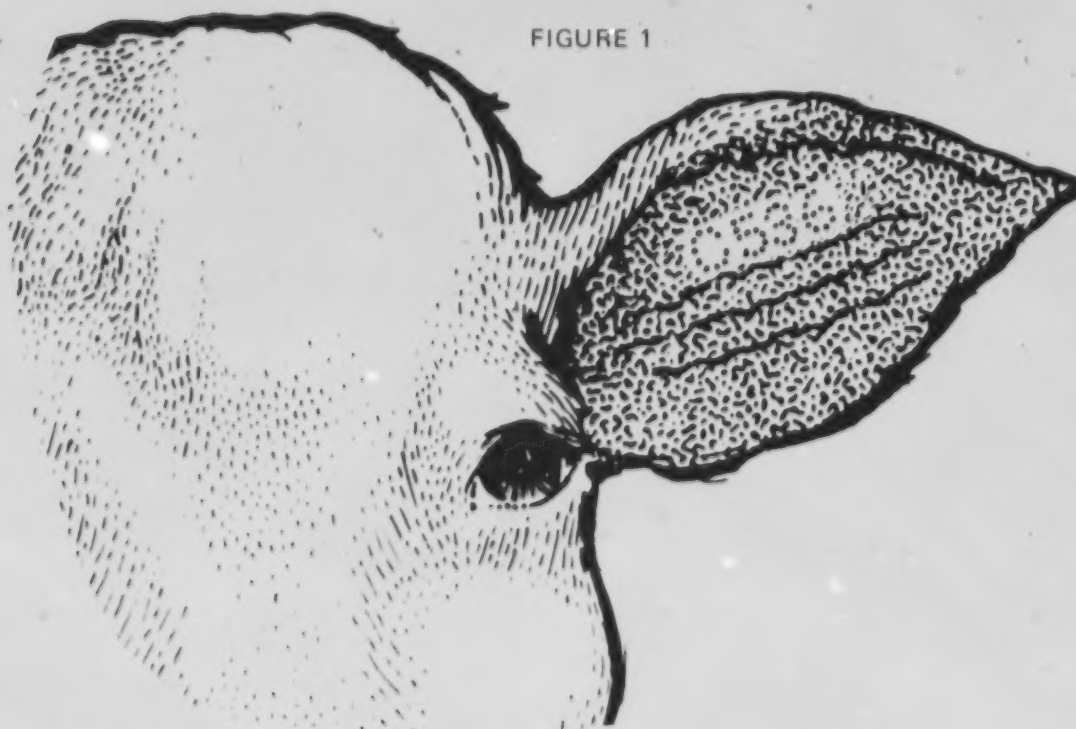
- I. Tools and equipment
 - A. Headgate and squeeze chute
 - B. Tattooing pliers
 - C. Tattoo ink
 - D. Alcohol
 - E. Clean rags
 - F. Three or four sets of digits

- II. Procedure

- A. Restrain animal in headgate and squeeze chute
 - B. Cleanse tattoo site using alcohol and a clean rag (Figure 1)

(NOTE: Select a site free of pigment between the cords or ribs and near the base of the ear.)

FIGURE 1



JOB SHEET #2

- C. Clamp tattoo pliers on a piece of cardboard to be sure that figures or letters are in order and are right side up
- D. Clamp tattoo pliers quickly and firmly into tattoo area of the ear
- E. Rub tattoo ink thoroughly into each separate puncture hole of ear with thumb

(NOTE: The secret of tattooing is to get ink in below the surface so that the skin will heal over it. If there is an excessive flow of blood, it will be necessary to use more ink and rub longer.)

- F. Examine tattoo
- G. Clean tattoo pliers and digits

IDENTIFICATION
UNIT VII

JOB SHEET #3--NOSEPRINT CATTLE

I. Tools and equipment

- A. Ink pad and ink
- B. Note card, 3 x 5
- C. Terrycloth towel
- D. Headgate

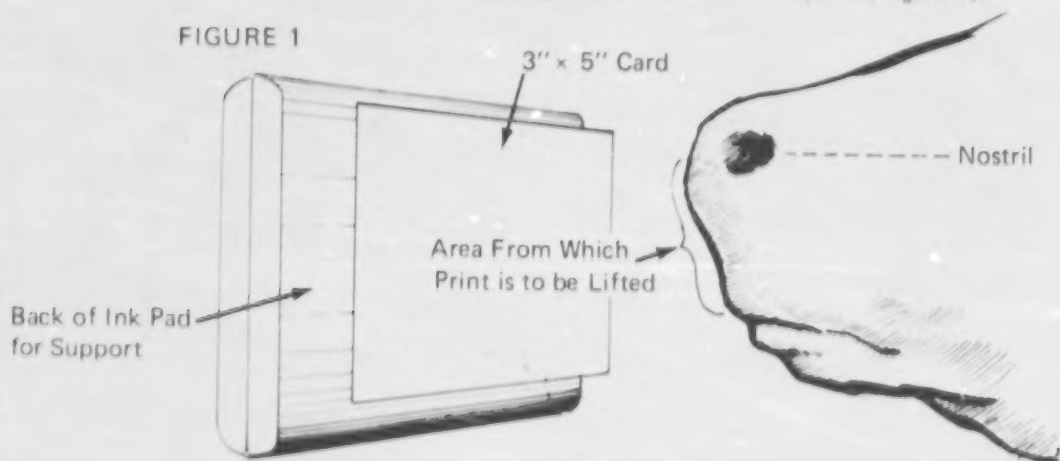
II. Procedure

- A. Place animal in headgate
- B. Stand to the right of the animal's head and reach over with your left arm to hold the head still
- C. Dry the moisture from the nostril area with terrycloth towel

(NOTE: The following steps must be done quickly or moisture will return to nose and cause a poor print.)

- D. Cover the hairless area of the nose with black ink by padding the area with an ink pad
- E. Press the 3 x 5 index card against the nose to lift a print (Figure 1)

FIGURE 1



- F. Repeat the sequence if the print is smeared because of card movement or moisture from the nose

JOB SHEET #3

- G. Label the printed card with tattoo of animal, owner, and date (Figure 2)

FIGURE 2



3" x 5" Printed Card

IDENTIFICATION
UNIT VII

TEST

NAME _____ SCORE _____

1. Match terms on the right to the correct definitions.

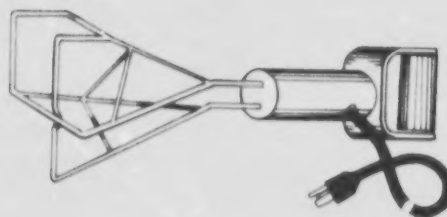
- _____ a. Making an ink blot impression of the lines in the nose of cattle
- _____ b. Using a hot iron to burn a permanent scar for identification
- _____ c. Cutting slots in the ear for permanent identification
- _____ d. Piercing the skin with instruments equipped with needle points and rubbing ink into pierced area
- _____ e. Using metal or plastic tags
- _____ f. Using an extremely cold iron to brand permanently
- _____ g. Using an iron coated with wet paint to temporarily brand livestock

- 1. Ear notching
- 2. Noseprinting
- 3. Tagging
- 4. Tattooing
- 5. Paint branding
- 6. Freeze branding
- 7. Hot iron branding

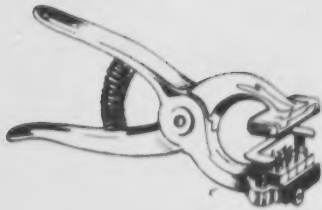
2. Identify the tools below.



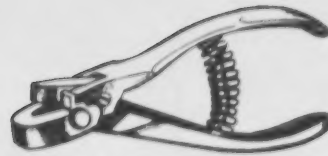
a. _____



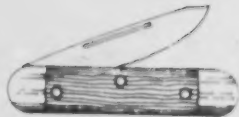
b. _____



c. _____



d. _____



e. _____



f. _____

3. Classify methods of identification for livestock by placing an "X" for cattle, an "S" for sheep, and an "H" for swine in the blanks below. (Some blanks have more than one correct answer.)

_____ a. Hot iron branding

_____ b. Ear notching

_____ c. Ear marking

_____ d. Tattooing

_____ e. Paint branding

_____ f. Freeze branding

_____ g. Tagging

_____ h. Noseprinting

4. Identify the following earmarks.



a. _____



b. _____



c. _____



d. _____



e. _____



f. _____



g. _____



h. _____



i. _____

5. Select from the list below the regulations that affect registration of brands. Place an "X" by the correct answers.

- _____ a. Western cattle states provide for recording of brands
- _____ b. Brand may be used in two locations
- _____ c. Registration must be confined to one brand location
- _____ d. Recorded brand registration must be renewed on even-numbered years
- _____ e. Cattleman's Association Brand Division approves applications for a brand and a certificate is issued
- _____ f. There are 13 brand locations on cattle
- _____ g. Bill of sale should be secured when purchasing branded livestock
- _____ h. Brand may be registered on the left jaw by a rancher
- _____ i. Brands should be 4 or 5 inches in length or diameter
- _____ j. Two units or digits are required for registration

6. Name three materials used for hot irons.

- a. _____
- b. _____
- c. _____

7. Select from the list below tips to follow in branding. Place an "X" by the correct answer.

- _____ a. Oil or grease applied to the branded area will usually aid in smoother, faster peeling
- _____ b. Branding on top of any part of a previous brand is a violation of branding laws
- _____ c. Brand area should be clipped when animals have a heavy hair coat
- _____ d. Irons should have a thickness or face of 3/8 to 1/2 inch
- _____ e. Four-inch iron should be used on calves
- _____ f. Blotching occurs when two parts of an iron come together
- _____ g. Five-inch iron or larger should be used on yearlings or mature cattle
- _____ h. Simple brand patterns are best
- _____ i. Irons which are too hot blotch the brand and are hard to read
- _____ j. Rocking the iron assures a burn on all parts of the brand
- _____ k. Iron is too hot when hair catches fire
- _____ l. Brand should be the color of saddle leather
- _____ m. Acids and other branding fluids are recommended
- _____ n. Iron should be heated until it is the color of ashes

8. Name six rules to follow in ear notching pigs.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____

9. Ear notch the pigs below using the swine ear notch system.

a. Pig 7-3



b. Pig 26-22



c. Pig 160-8



10. Demonstrate the ability to:

- a. Brand cattle using the hot iron method.
- b. Tattoo a calf.
- c. Noseprint cattle.

(NOTE: If these activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

IDENTIFICATION
UNIT VII

ANSWERS TO TEST

1. a. 2
b. 7
c. 1
d. 4
e. 3
f. 6
g. 5
2. a. Tagging pliers
b. Electric branding iron
c. Tattooing pliers
d. Ear notching pliers
e. Knife
f. Hot iron
3. a. C
b. H
c. C
d. C, H, S
e. C, H, S
f. C
g. C, H, S
h. C
4. a. Tipped
b. Swallow fork
c. Bobbed or cropped
d. Split

- e. Underbit
 - f. Overbit
 - g. Hole
 - h. Underslope
 - i. Overslope
5. a, c, e, f, g, i, j
6. a. Iron
- b. Steel
- c. Stainless steel
7. a, b, c, d, e, f, g, h, i, j, k, l, n
8. a. Litter number is placed in the pig's right ear
- b. Pig number is placed in the pig's left ear
- c. Pigs in the same litter will have identical notches in the right ear
- d. Pigs in the same litter will have different notches in the left ear
- e. Litter of the first sow to farrow is usually designated litter number one
- f. Baby pig ear notchers should be used on pigs up to five weeks of age and larger ear notchers should be used on larger pigs



10. Performance skills evaluated to satisfaction of instructor

SHEARING UNIT VIII

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to shear a lamb and roll and tie its fleece. This knowledge will be evidenced through completion of the job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with shearing sheep to the correct definitions.
2. Select from a list provisions of the National Wool Act of 1954.
3. Name practices that insure good shearing.
4. Select from a list locations of wool purchasers in Oklahoma.
5. Demonstrate the ability to:
 - a. Shear a lamb.
 - b. Roll and tie a fleece.

SHEARING UNIT VIII

SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information and job sheets.
 - C. Discuss unit and specific objectives.
 - D. Discuss information sheet.
 - E. Check for locations in your area where wool may be sold.
 - F. Demonstrate and discuss procedures outlined in the job sheets.
 - G. Have a resource person who is a professional in the sheep shearing field to demonstrate job sheets.
 - H. Order pamphlets on sheep shearing from Sunbeam Stewart Corporation, Advertising Department, 5400 West Roosevelt Road, Chicago 50, Illinois.
 - I. Give test.
 - J. Reteach if necessary.
- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Job sheets
 1. Job Sheet #1--Shear a Lamb
 2. Job Sheet #2--Roll and Tie a Fleece
 - D. Test
 - E. Answers to test
- III. Unit references:
 - A. "Self-Teaching Shearing Chart." Sunbeam Stewart Corp., 1976.
 - B. *How to Harvest the Wool Crop*. Sunbeam Stewart Corp./Hardware Machinery Div., n.d.

SHEARING UNIT VIII

INFORMATION SHEET

I. Terms and definitions

- A. Shearing--Removal of the wool crop
- B. Tagging--Removal of the wool from the crotch, over the dock, and down the back of the hind legs

(NOTE: This practice is usually done on feeder lambs and on ewes before breeding or lambing.)

- C. Facing--Removal of the winter growth of wool from the face to correct wool blindness
- D. Summer shearing--Shearing all of the lamb in early summer

(NOTE: Sheared lambs do better during hot weather and develop faster than unshorn lambs.)

- E. Neck shearing--Removal of wool from neck and head area

(NOTE: This type of shearing causes ewes to go into the barn on cold nights during lambing.)

II. Provisions of the National Wool Act of 1954

- A. Act was extended through December 31, 1981 by Food and Agriculture Act of 1977
- B. Applications for payments should be filed by the producer with the county ASCS offices not later than January 31 of the year following the marketing year for which payments may be due

(NOTE: Payments are generally made in April of the year following the marketing year for which payments may be due.)

- C. Payments on shorn wool are based on the percentage needed to bring the average return received by all producers up to the support level

(NOTE: The percentage method of payment is employed to encourage producers to improve the quality and marketing of their wool. Under this method, the producer who gets a higher market price for the wool also gets a higher incentive payment.)

- D. Payments are provided on sales of unshorn lambs

INFORMATION SHEET

- E. Deductions are made on shorn wool and lamb payments to provide funds for advertising, promotion, and related market development activities on wool and lambs

(NOTE: Deductions for this purpose are authorized by law and were approved by over 85 percent of the producers voting in a 1974 referendum. The activities are carried out by the American Sheep Producers Council, Inc., an organization of sheep producers.)

III. Good shearing practices

- A. Hold the sheep in a position that insures that its skin will be stretched tight on the part of the body being shorn
- B. Make each stroke with the clippers as long as possible
- C. Keep the ends of the teeth of the clippers on the skin of the sheep throughout every stroke
- D. Keep shearing equipment in good condition
- E. Work on a clean, smooth surface

(NOTE: Speed is not important. It takes twelve months to grow a fleece of wool so a little extra time spent in shearing and putting it up in an attractive manner is time well spent.)

IV. Locations of wool purchasers in Oklahoma

(NOTE: Wool in Oklahoma is sold to Mid-State Wool Growers through their representatives in locations throughout the state.)

- A. Sulphur
- B. Hobart
- C. Ponca City
- D. Muskogee
- E. Weatherford

SHEARING
UNIT VIII

JOB SHEET #1--SHEAR A LAMB

- I. Tools and equipment
 - A. Sheep shearing machine or clippers
 - B. Lamb in full fleece
 - C. Clean work area
 - D. Clipper lubricant

II. Procedure

(NOTE: Speed is not important. It takes a full year to produce a crop of wool so a little extra time in shearing in a clean attractive manner is time well spent.)

- A. Support sheep firmly between your knees
- B. Rest sheep's foreleg on your left side to tighten skin on belly
- C. Make first stroke of the clippers straight down on right side of brisket to the open flank area (Figure 1)
- D. Make the second stroke on the left side of the brisket down under left front leg (Figure 1)
- E. Follow strokes three and four to the left flank area (Figure 1)

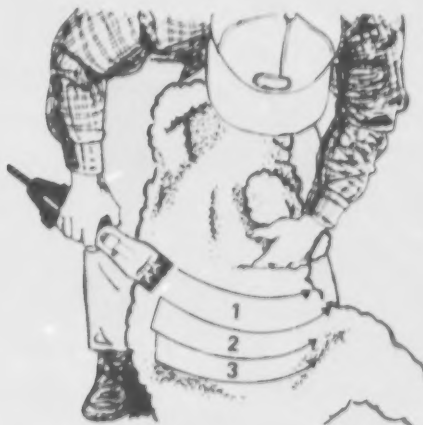
FIGURE 1



JOB SHEET #1

- F. Hold sheep's left front leg with your left wrist, leaving your left hand free to tighten skin on the belly area; continue strokes as shown in Figure 2

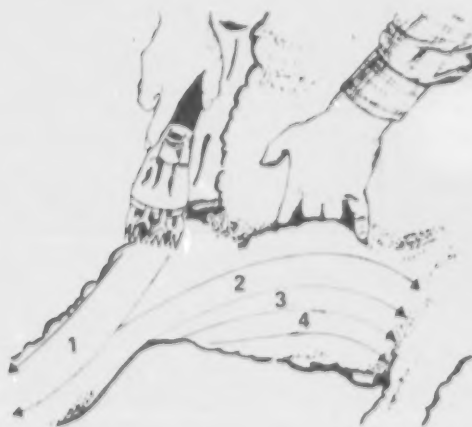
FIGURE 2



- G. Stroke out inside of right back leg and then start up and back around the udder (Figure 3)

(CAUTION: Do not cut teats on a ewe or sheath on a ram.)

FIGURE 3



JOB SHEET #1

- H. Apply pressure to the left stifle joint, using left hand, to make sheep hold leg out straight; continue strokes as shown in Figure 4

(NOTE: Right front leg of sheep has dropped between your legs. Move your right leg back a few inches to help turn sheep.)

FIGURE 4



- I. Apply pressure on the right stifle joint to make sheep hold leg straight out
- J. Shear out top of leg and then start at toe and go back up to clean the flank area (Figure 5)

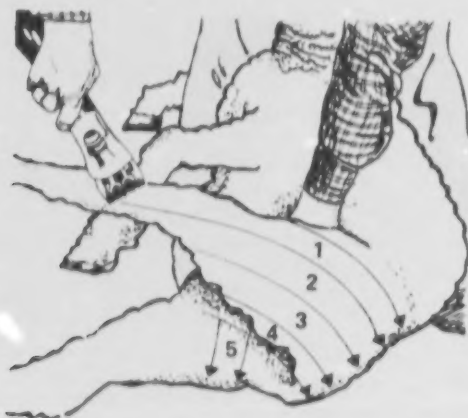
FIGURE 5



JOB SHEET #1

- K. Hold sheep fully relaxed against your legs and apply pressure in flank; continue strokes as shown in Figure 6

FIGURE 6



- L. Drop wrist to position the comb to enter wool on top of tail and shear forward along backbone cleaning all wool from tail (Figure 7)

FIGURE 7



JOB SHEET #1

- M. Shift left hand to sheep's head without changing position of sheep and shear top knot (Figure 8)

(NOTE: Shear top knot only by ending strokes on line between front side of ears.)

FIGURE 8



- N. Straighten sheep, putting your left foot close to sheep's hip and your right foot in crotch between legs
- O. Turn clipper to right as first stroke is ending by sheep's chin, causing wool along top side of stroke to break off so you can see where to make second stroke (Figure 9)

FIGURE 9

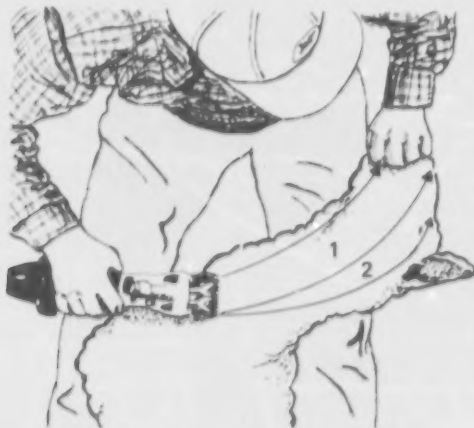


JOB SHEET #1

- P. Turn sheep's head so the nose is up and the right side is against leg, holding body firmly between knees

(NOTE: Left hand is shifted toward nose as strokes are completed along jaw. See Figure 10.)

FIGURE 10

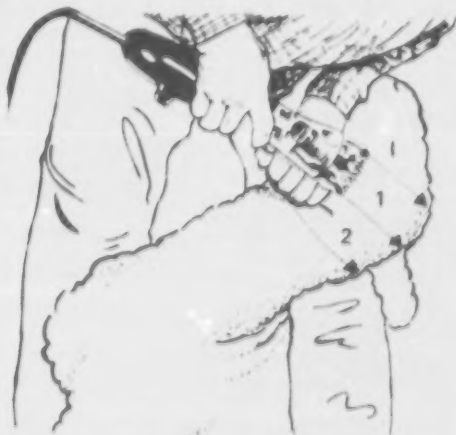


- Q. Complete last stroke up neck

(NOTE: This stroke should remove wool to base of left ear.)

- R. Hold head against leg with heel of hand and grasp ear; shear around ear (Figure 11)

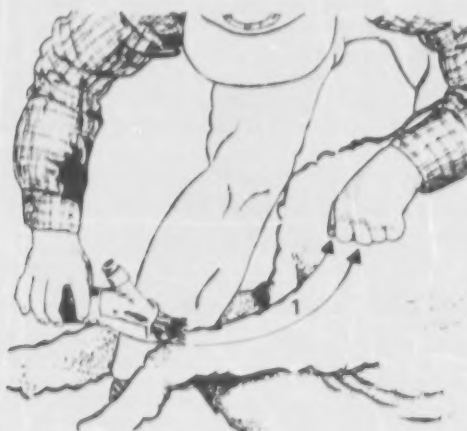
FIGURE 11



JOB SHEET #1

- S. Hold sheep's body between knees, holding head against left leg with elbow and using left hand to stretch skin on shoulder
- T. Start stroke at knee, shearing upward to clean tags on front of shoulder (Figure 12)

FIGURE 12



- U. Take boots off with downward strokes (Figure 13)

FIGURE 13



JOB SHEET #1

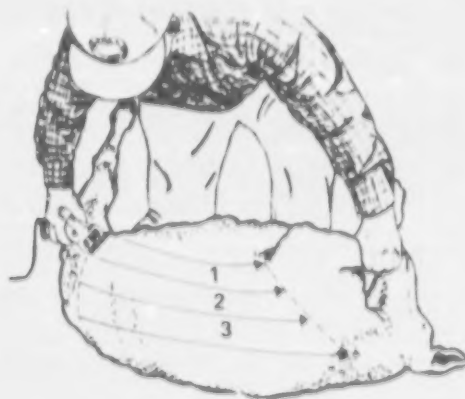
- V. Hold sheep's leg close to body and shear down to shoulder as shown (Figure 14)

FIGURE 14



- W. Lay sheep on its back, keeping right foot between sheep's hind legs and left foot under right shoulder; continue strokes as shown in Figure 15

FIGURE 15



- X. Force left foreleg toward sheep's head to stretch skin on side
- Y. Make sure sheep's tail is behind your right foot when you reach its backbone
(NOTE: Your left leg should be under sheep's shoulder, with your left foot across sheep to give leverage.)
- Z. Apply downward pressure to sheep's head with your left hand to "roll" sheep up

JOB SHEET #1

AA. Shear three strokes over backbone to save time on last side

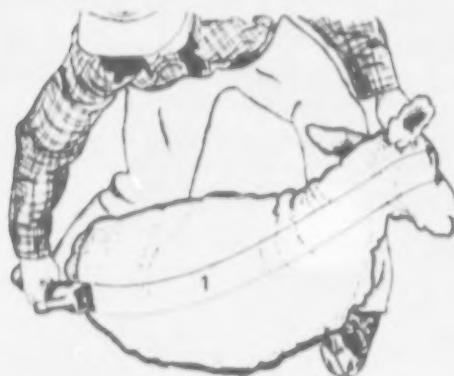
(NOTE: Avoid standing on or tearing fleece when swinging right leg out to shear last side. See Figure 16.)

FIGURE 16



BB. Hold ear up and extend stroke under ear and out to jaw with left hand on final stroke of long blow (Figure 17)

FIGURE 17



CC. Clamp sheep between your legs and hold sheep's head with knees

JOB SHEET #1

DD. Clear wool from ear and face and shear straight down to point of shoulder, using left hand to straighten wrinkles

(NOTE: Allow sheep's right foreleg to come forward after the third stroke. See Figure 18.)

FIGURE 18



EE. Push down on point of shoulder with palm of hand and pull skin up with finger to clean tags under front leg

FF. Turn clipper under front leg and shear to toe (Figure 19)

FIGURE 19

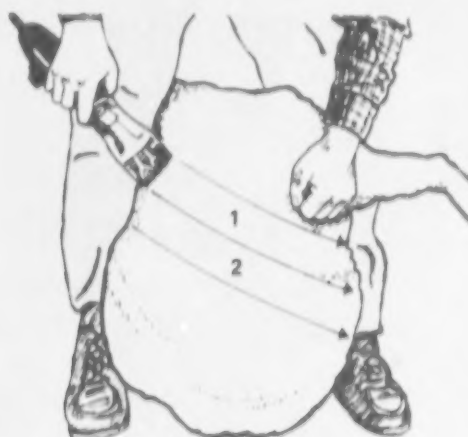


JOB SHEET #1

GG. Hold sheep firmly between legs with its head down on its left side to stretch skin on right side as wool is taken off

HH. Move left foot to other side of sheep's hind legs as last stroke is made; raise head (Figure 20)

FIGURE 20



II. Make remaining strokes at same angle to toe, using a full comb (Figure 21)

FIGURE 21

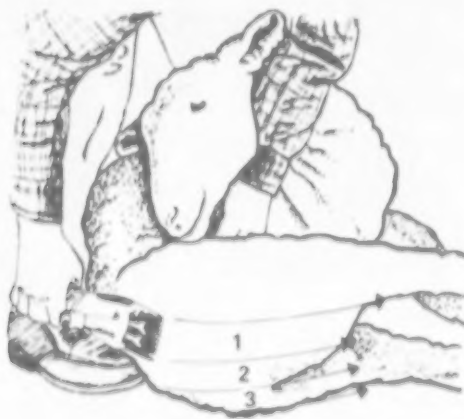


JOB SHEET #1

- JJ. Hold skin of right flank in left hand and apply pressure to stifle joint with sheep in position

(NOTE: Slide comb at angle around ham string to avoid accidental cutting of ham string. Hold sheep's head between left arm and right leg, moving left foot back so sheep settles down on its side and moving right foot forward to allow more reach for last strokes. Left foot keeps sheep's shoulder and feet off floor. See Figure 22.)

FIGURE 22

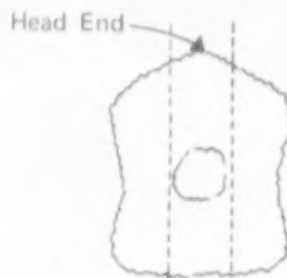


SHEARING
UNIT VIII

JOB SHEET #2-ROLL AND TIE A FLEECE

- I. Tools and equipment
 - A. Shorn fleece
 - B. Paper fleece twine
 - C. Clean work area
 - D. Large table
- II. Procedure
 - A. Turn fleece with skin side down on table
 - B. Straighten fleece out and note location of the head and dock ends
 - C. Push wool together to make fleece more compact
 - D. Throw belly wool into center since it was shorn separately
 - E. Fold each side of fleece toward the center (Figure 1)

FIGURE 1



(NOTE: Fleece should look like Figure 2.)

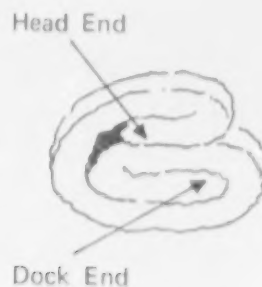
FIGURE 2



JOB SHEET #2

- F. Roll fleece loosely starting at the dock end for $\frac{3}{4}$ the length of the fleece
- G. Roll head end over once and then bring head end on top of the dock roll (Figure 3)

FIGURE 3



- H. Draw paper fleece twine under the bundle to the center of the fleece, bringing the twine up at each end of the roll and cross twine at top of roll
- I. Turn bundle of wool over and pull twine tight and tie (Figure 4)

FIGURE 4



SHEARING
UNIT VIII

TEST

NAME _____ SCORE _____

1. Match the terms on the right to the correct definitions.

- | | |
|---|--------------------|
| _____ a. Removal of the winter growth of wool from the face to correct wool blindness | 1. Summer shearing |
| _____ b. Removal of the wool crop | 2. Shearing |
| _____ c. Shearing all of the lamb in early summer | 3. Tagging |
| _____ d. Removal of the wool from the crotch, over the dock, and down the back of the hind legs | 4. Neck shearing |
| _____ e. Removal of wool from neck and head area | 5. Facing |

2. Select from the list below provisions of the National Wool Act of 1954 by placing an "X" by the correct answers.

- _____ a. Payments are provided on sales of unshorn lambs
- _____ b. Payments are generally made in January of the year following the marketing year for which payments may be due
- _____ c. Payments on shorn wool are based on the percentage needed to bring the average return received by all producers up to the support level
- _____ d. Act was extended through December 31, 1981 by Food and Agriculture Act of 1977
- _____ e. Applications for payments should be filed by the producer with the county ASCS offices not later than January 31 of the year following the marketing year for which payments may be due
- _____ f. Deductions are made on shorn wool and lamb payments to provide funds for advertising, promotion, and related market development activities on wool and lambs

3. Name the five factors that influence good shearing.

- a. _____
- b. _____
- c. _____

d. _____

e. _____

4. Select from the list below the locations of wool purchasers in Oklahoma by placing an "X" by the correct answers.

_____ a. Sulphur

_____ b. Morrison

_____ c. Ponca City

_____ d. Tulsa

_____ e. Tishomingo

_____ f. Weatherford

_____ g. Velma

_____ h. Hobart

_____ i. Morrison

_____ j. Muskogee

_____ k. Lawton

5. Demonstrate the ability to:

a. Shear a lamb.

b. Roll and tie a fleece.

(NOTE: If these activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

SHEARING
UNIT VIII

ANSWERS TO TEST

1. a. 5
b. 2
c. 1
d. 3
e. 4
2. a, c, d, e, f
3. a. Hold the sheep in a position that insures that its skin will be stretched tight on the part of the body being shorn
b. Make each stroke with the clippers as long as possible
c. Keep the ends of the teeth of the clippers on the skin of the sheep throughout every stroke
d. Keep shearing equipment in good condition
e. Work on a clean, smooth surface
4. a, c, f, h, j
5. Performance skills evaluated to the satisfaction of the instructor

HOOF TRIMMING UNIT IX

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to trim a calf's hooves using hoof nippers. This knowledge will be evidenced through completion of the job sheet and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Define *pastern*.
2. Select from a list reasons for hoof trimming.
3. Name methods of restraining for hoof trimming.
4. Match tools used in hoof trimming to their correct use.
5. Match structural factors to consider when hoof trimming to the correct trimming procedure.
6. Identify methods of hoof trimming.
7. Demonstrate the ability to trim a calf's hooves using hoof nippers.

HOOF TRIMMING UNIT IX

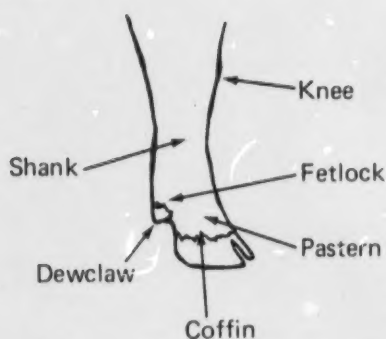
SUGGESTED ACTIVITIES

- I. Suggested activities for instructor:
 - A. Provide student with objective sheet.
 - B. Provide student with information and job sheets.
 - C. Make transparency.
 - D. Discuss unit and specific objectives.
 - E. Discuss information sheet.
 - F. Demonstrate and discuss procedures outlined in the job sheet.
 - G. Use field trip to look at livestock with structural problems and discuss the corrective procedures.
 - H. Give test.
 - I. Reteach if necessary.
- II. Instructional materials:
 - A. Objective sheet
 - B. Information sheet
 - C. Transparency master: TM 1--Regular Hoof Trimming Improves Appearance
 - D. Job Sheet #1--Trim a Calf's Hooves Using Hoof Nippers
 - E. Test
 - F. Answers to test

HOOF TRIMMING UNIT IX

INFORMATION SHEET

- I. Pastern--That part of an animal's foot from the fetlock to the coffin



II. Reasons for hoof trimming (Transparency 1)

- A. Long hooves are subject to cracking which may result in lameness
- B. Long hooves cause undue strain to be placed on the legs and pasterns of the animal
- C. Properly trimmed feet help correct faults in the animal's legs and posture
- D. Properly trimmed feet in show cattle help to enhance the animal's appearance and eye appeal

(NOTE: A straight-legged calf will not stay that way unless the feet are trimmed regularly.)

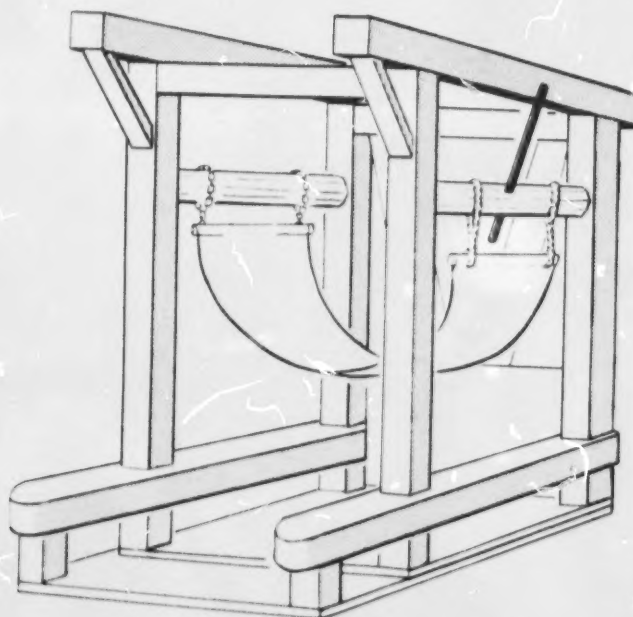
INFORMATION SHEET

III. Restraining methods

A. Tilting table



B. Cattle stock

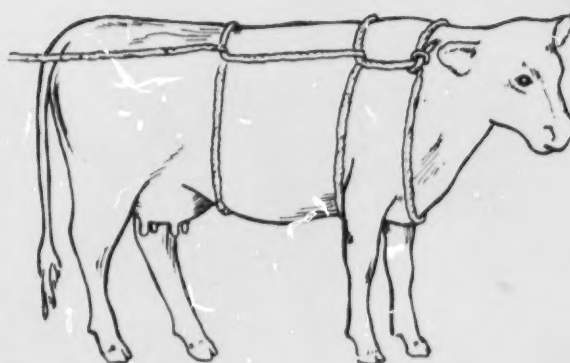


INFORMATION SHEET

C. Halter



D. Rope squeeze casting



INFORMATION SHEET

IV. Tools used in hoof trimming

A. Electric grinder--Smooths and shapes the hoof



B. Hoof rasp--Smooths and shapes the hoof

(NOTE: Personal preference comes into play when choosing whether to use a rasp or a grinder. The electric grinder gives a more professional look.)

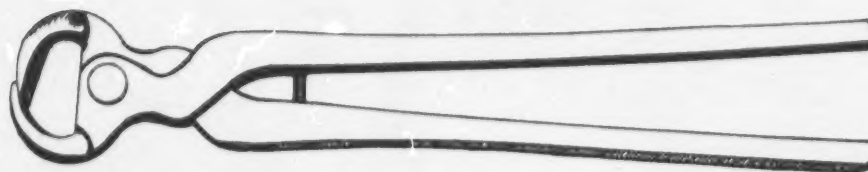


INFORMATION SHEET

- C. Hoof knife--Cleans dirt and manure from hoof



- D. Hoof nippers--Clips the majority of the hoof growth back



- E. Chisel--Chips off toes of animal



INFORMATION SHEET

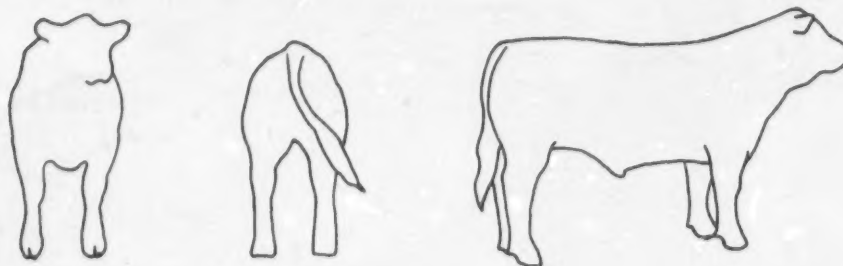
- F. Hoof trimmer--Trims toe of animal with minimum restraint



- V. Structural factors to consider when hoof trimming

(NOTE: The side towards which the toe points should be trimmed shorter.)

- A. Correct--Trim and shape hoof evenly and level bottom of hoof



- B. Toes out--Trim outside hoof as short as possible and then trim inside hoof longer than hoof on outside on the front legs



INFORMATION SHEET

- C. Toes in--Trim inside hoof as short as possible and then trim outside hoof longer than hoof on inside on the front legs



- D. Cow-hocked--Trim inside hoof as short as possible and then trim outside hoof longer on rear legs



- E. Wide at the hocks--Trim outside hoof as short as possible and then trim inside hoof longer on rear legs



INFORMATION SHEET

- F. Sickie-hocked and back at the knees--Trim toes as short as possible and leave the heel

(NOTE: This will get the calf up on its toes.)



- G. Post-legged and buck-kneed--Trim heels as short as possible and leave more toe

(NOTE: This will get the calf down on the heel and off of the toe.)

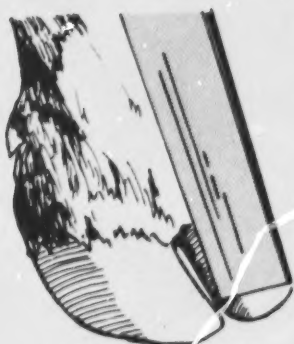


(NOTE: Correct structure is fundamental to efficient beef production. Select calves that have straight legs. Regular hoof trimming only helps to keep a calf straight legged and will not correct a structural defect completely. Hoof trimming will only minimize a defect.)

INFORMATION SHEET

VI. Methods of hoof trimming

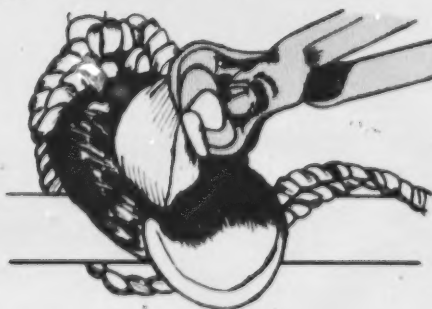
A. Chisel



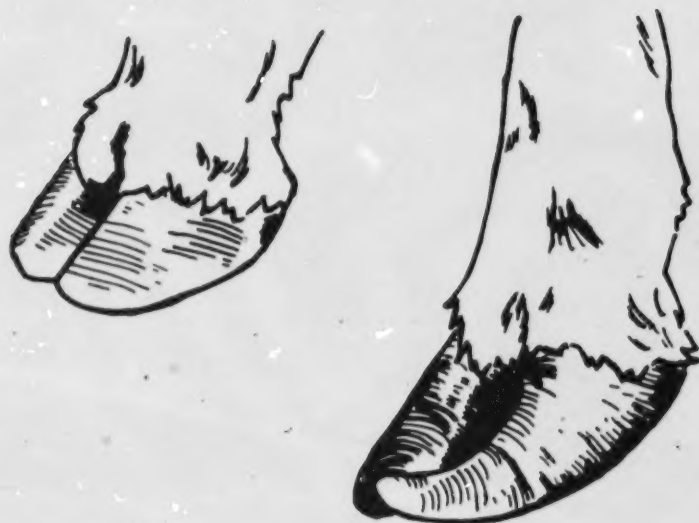
B. Hoof trimmer



C. Hoof nippers



Regular Hoof Trimming Improves Appearance



HOOF TRIMMING
UNIT IX

JOB SHEET #1--TRIM A CALF'S HOOVES USING HOOF NIPPERS

(NOTE: A show animal should be trimmed at least two weeks prior to show.)

I. Tools and equipment

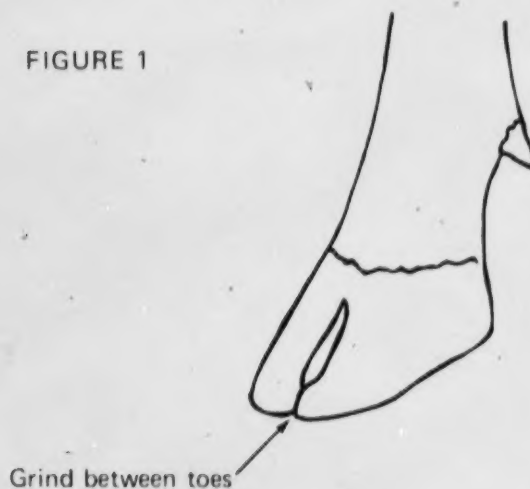
- A. Method of restraint
- B. Hoof nippers
- C. Hoof knife
- D. Electric grinder or hoof rasp

II. Procedure

- A. Restrain calf
- B. Clean hoof with hoof knife
- C. Clip hoof with hoof nippers to correct calf's structure
- D. Smooth and shape the hoof with a hoof rasp or electric grinder (Figure 1)

(NOTE: Most cattle turn in between toes. This is corrected by removing excess hoof between toes with rasp or electric grinder.)

FIGURE 1



- E. Repeat procedure on each hoof

HOOF TRIMMING UNIT IX

TEST

NAME _____ SCORE _____

1. Define *pastern*-- _____

2. Select from the list reasons for hoof trimming. Place an "X" by the correct answers.
 - _____ a. Properly trimmed feet help correct faults in the animal's legs and posture
 - _____ b. Long hooves cause footrot
 - _____ c. Properly trimmed feet correct skeletal make-up
 - _____ d. Long hooves cause undue strain to be placed on the legs and pasterns of the animal
 - _____ e. Properly trimmed feet in show cattle help to enhance the animal's appearance and eye appeal
 - _____ f. Long hooves are subject to cracking which may result in lameness
3. Name four methods of restraining for hoof trimming.
 - a. _____
 - b. _____
 - c. _____
 - d. _____
4. Match the tools on the right to their correct use. (Some tools may have the same use.)

_____ a. Smoothes and shapes the hoof	1. Chisel
_____ b. Cleans dirt and manure from hoof	2. Hoof rasp
_____ c. Clips the majority of the hoof growth back	3. Hoof trimmer
_____ d. Chips off toes of animal	4. Electric grinder
_____ e. Trims toe of animal with minimum restraint	5. Hoof knife
	6. Hoof nippers

5. Match the structural factors on the right to the correct trimming procedure.

- | | |
|---|--|
| _____ a. Trim inside hoof as short as possible and then trim outside hoof longer than hoof on inside on the front legs | 1. Sickie-hocked and back at the knees |
| _____ b. Trim and shape hoof evenly and level bottom of hoof | 2. Wide at the hocks |
| _____ c. Trim outside hoof as short as possible and then trim inside hoof longer than hoof on outside on the front legs | 3. Cow-hocked |
| _____ d. Trim inside hoof as short as possible and then trim outside hoof longer on rear legs | 4. Toes in |
| _____ e. Trim outside hoof as short as possible and then trim inside hoof longer on rear legs | 5. Toes out |
| _____ f. Trim toes as short as possible and leave the heel | 6. Correct |
| _____ g. Trim heels as short as possible and leave more toe | 7. Post-legged and buck-kneed |

6. Identify the following methods of hoof-trimming.



a. _____



b. _____



c. _____

7. Demonstrate the ability to trim a calf's hooves using hoof nippers.

(NOTE: If this activity has not been accomplished prior to the test, ask the instructor when it should be completed.)

HOOF TRIMMING
UNIT IX

ANSWERS TO TEST

1. That part of an animal's foot from the fetlock to the coffin
2. a, d, e, f
3. a. Tilting table
b. Cattle stock
c. Halter
d. Rope squeeze casting
4. a. 2, 4
b. 5
c. 6
d. 1
e. 3
5. a. 4
b. 6
c. 5
d. 3
e. 2
f. 1
g. 7
6. a. Hoof trimmer
b. Chisel
c. Hoof nippers
7. Performance skills evaluated to the satisfaction of instructor

BIRTH ASSISTANCE UNIT X

UNIT OBJECTIVE

After completion of this unit, the student should be able to demonstrate the ability to give birth assistance to livestock. This knowledge will be evidenced through completion of job sheets and unit test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with birth assistance to the correct definitions.
2. Identify basic instruments needed to assist with calving difficulties.
3. Select from the list chemicals and drugs needed to assist with calving, lambing, and farrowing difficulties.
4. Match the three stages of parturition in cattle to the correct descriptions.
5. Match calving and lambing positions to the correct description of each.
6. Discuss the steps for vaginal examination by hand.
7. State the normal birth averages of swine as related to gestation, litter size, duration of labor, interval between pigs, birth presentation, and afterbirth.
8. Match farrowing difficulties of swine to the correct description of each.
9. Demonstrate the ability to:
 - a. Assist a cow in calving.
 - b. Assist a ewe at lambing.
 - c. Farrow a sow.
 - d. Clip needle teeth of newborn pigs.

BIRTH ASSISTANCE
UNIT X

SUGGESTED ACTIVITIES

I. Suggested activities for instructor:

- A. Provide student with objective sheet.
- B. Provide student with information and job sheets.
- C. Discuss unit and specific objectives.
- D. Discuss information sheet.
- E. Demonstrate and discuss procedures outlined in the job sheets.
- F. Teach this unit in connection with the animal science section of the Ag III core curriculum.
- G. Show filmstrip "The Brood Sow and Litter."

(NOTE: The filmstrip may be purchased from Vocational Education Productions, California State Polytechnic College, San Luis Obispo, California 93401.)

- H. Give test.
- I. Reteach if necessary.

II. Instructional materials:

- A. Objective sheet
- B. Information sheet
- C. Job sheets
 - 1. Job Sheet #1--Assist a Cow in Calving
 - 2. Job Sheet #2--Assist a Ewe at Lambing
 - 3. Job Sheet #3--Farrow a Sow
 - 4. Job Sheet #4--Clip Needle Teeth of Newborn Pigs
- D. Test
- E. Answers to test

III. Unit references:

- A. Blakely, James, and King, Dwight. *The Brass Tacks of Animal Health*. St. Louis, Missouri: Doane Agricultural Service, Inc., 1978.
- B. The TV Vet. *The TV Vet Book for Stock Farmers No. 2: Calving the Cow and Care of the Calf*. Ipowich, Suffolk England: Farming Press Ltd., 1977.
- C. Gibbons, W. J.; Catcott, E. J.; and Smithcors, J. F., eds. *Bovine Medicine and Surgery: A Text and Reference Work*. Wheaton, Illinois: American Veterinary Publications, Inc., 1970.

BIRTH ASSISTANCE UNIT X

INFORMATION SHEET

I. Terms and definitions

- A. Dystocia--Difficult labor or delivery
- B. Parturition--Birth process
- C. Breech--Backward birth
- D. Fetus--Unborn offspring
- E. Embryotomy--Cutting up of a fetus while it is still inside the mother

(NOTE: This should be performed by a veterinary surgeon, but a knowledge of the method employed should help agriculture students and farmers to better understand the surgeon's tasks.)

- F. Obstetrical--Anything dealing with birth from conception to delivery
- G. Placenta--Afterbirth
- H. Caesarean section--Surgical removal of the fetus

II. Basic instruments needed to assist with calving difficulties

- A. Obstetrical chain

(NOTE: Soft rope will work. The rope should be discarded unless it is plastic and can be sterilized.)



INFORMATION SHEET

B. Obstetrical handle



C. Mechanical calf puller



III. Chemicals and drugs needed to assist with calving, lambing, and farrowing difficulties

A. Obstetrical soap

(NOTE: If none is available, a satisfactory lubricant can be made by dissolving a mild soap in warm water.)

B. Broad-range antibiotic

Example: Oxytetracycline or chlortetracycline in 200 to 500 ml of physiological saline solution

C. Furacin bolus

(NOTE: Furacin boluses are given if a retained uterus occurs.)

D. Tincture of iodine

(NOTE: The navel cord of the calf, pig, or lamb should be treated with tincture of iodine following delivery.)

INFORMATION SHEET

IV. Three stages of parturition in cattle

(NOTE: In normal labor, delivery may take from 2 to 6 hours, but may be as brief as 30 minutes or as long as 24 hours. Stage one usually takes longer in first-calf heifers than for cows who have calved before.)

A. Stage one

1. Cow tries to isolate herself and shows general restlessness and tail switching or kicks at her sides
2. Uterine contractions occur at about 15 minute intervals
3. Water sac passes through cervix and often ruptures, releasing water to the outside

B. Stage two--Uterine contractions will occur at intervals of about two minutes and will last one and one-half minutes

(NOTE: This is the beginning of expulsion. It is important not to excite the cow at this time, but you should be prepared to help. Birth should be completed within two hours after the water sac appears. Intervention is justified if birth doesn't take place in two hours.)

C. Stage three

1. Calf is born
2. Placenta is expelled 30 minutes to 8 hours following birth

(NOTE: If placenta is retained for more than 12 hours, precautions must be taken to prevent infection and remove placenta.)

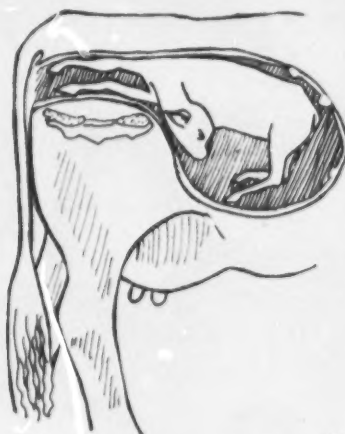
V. Calving and lambing positions

A. Normal--Both front legs are outstretched in the birth canal with the head and neck extended between or along the legs



INFORMATION SHEET

- B. Head back--Head and neck must be pulled around in line with the birth canal



(NOTE: Push the calf or lamb back and quickly release it in order to grasp its nose with your hand. If this doesn't work, you may use an obstetrical chain. Place the chain around the poll, under the ears, and through the mouth. Take care not to cut the birth canal with the open jaws of the calf or lamb.)

- C. Leg back--Calf or lamb is pushed back and folded foot is held in hand



(NOTE: In extreme cases, an obstetrical chain may need to be used.)

INFORMATION SHEET

- D. Dog-sitting position--Rear legs must be pushed back before birth can occur



(NOTE: Veterinary assistance is needed as soon as possible.)

- E. Backwards with rear legs extended--Breech birth in this position often requires no assistance



(NOTE: Any delay in the birth of calf or lamb may cause it to suffocate when navel cord separates. Therefore, assistance will be required if there is a delay.)

INFORMATION SHEET

- F. Upside down and backward--Calf or lamb has rotated from the normal position because of a twisting of the uterus



(NOTE: Veterinary help is needed. Never try to pull a calf or lamb in this position.)

- G. Breech--Calf or lamb should be pushed forward and rear legs pulled into birth canal



(NOTE: Place obstetrical chains on one rear leg at a time, push calf forward, and then pull leg into birth canal.)

INFORMATION SHEET

VI. Vaginal examination by hand

(NOTE: If problems should arise, they generally show up after the water sac appears. Two or three hours of labor with no progress warrants a vaginal examination by hand.)

A. Check for signs of life

1. Pull or pinch foot of fetus to cause movement
2. Place finger in mouth of fetus to cause sucking movement of tongue
3. Insert finger into rectum of fetus to cause constriction

(NOTE: This method is used with breech births.)

B. Check birth position

VII. Normal birth averages of swine

- A. Gestation--Ranges from 112 to 117 days, averaging 114 days
- B. Litter size--Ranges from 1 to 20, averaging 11 pigs
- C. Duration of labor--Ranges from 1/2 to 10 hours, averaging 2 1/2 hours
- D. Interval between pigs--Ranges from 1 minute to 4 hours, averaging 15 minutes
- E. Birth presentation--Approximately 50 to 70% of the pigs are born head first, 24 to 25% of the pigs are born breech
- F. Afterbirth--Passed 1/2 to 2 1/2 hours after last pig is born

VIII. Farrowing difficulties of swine

A. Prolonged gestation--Sow carries litter longer than 114 days

(NOTE: Sow should be checked twice daily. A discharge from vagina indicates a problem.)

B. Foul discharge of vulva--One or all of the pigs may have died

(NOTE: Veterinarian should be contacted immediately.)

C. Uterine inertia--Womb has not contracted fully

(NOTE: If the birth canal doesn't have a blockage or if there is more than 30 minutes between pigs, give 1 to 2 cc of POP [Purified Oxytocin Principle] intramuscularly or subcutaneously every 20 to 30 minutes as needed.)

INFORMATION SHEET

- D. Hysteria--Sow becomes so excited she cannot concentrate her energy for the birth process

(NOTE: Sows in this condition should be given a sedative and should be sold after pigs are weaned.)

- E. Distress or exhaustion--Sow is out of breath and hot to touch from heat

(NOTE: Give adequate ventilation, sponge sow down with water, give POP injection, and consult veterinarian.)

- F. Malpresentation of pig--Pig should be straightened up so that it is coming head first or hind feet first

(NOTE: Do not place your fingers in pig's mouth; it may bite you even before it is born. Make sure pig's feet are not stuck.)

BIRTH ASSISTANCE
UNIT X

JOB SHEET #1--ASSIST A COW IN CALVING

I. Tools and equipment

- A. Obstetrical chains
- B. Obstetrical handles
- C. Mechanical calf pullers
- D. Obstetrical soap
- E. Broad-range antibiotic
- F. Furacin boluses
- G. Tincture of iodine
- H. Cow or heifer calving
- I. Means of restraint if necessary
- J. Plastic gloves

(NOTE: All equipment should be sterile.)

II. Procedure

(NOTE: This procedure should be followed if there is no progress after two or three hours of labor.)

- A. Restrain animal if necessary
- B. Scrub your hands and arms thoroughly with obstetrical soap
- C. Wash cow's or heifer's vulva with obstetrical soap
- D. Insert hand very slowly and gently, palm side down
- E. Check calving position of fetus
- F. Correct calving position to the normal position or call veterinarian if professional assistance is necessary

(CAUTION: If it is necessary to call veterinarian, do not continue with this job sheet.)

- G. Lubricate vaginal walls and fetus liberally using obstetrical soap

(NOTE: An ounce of lubrication is worth a ton of pressure.)

JOB SHEET #1

- H. Make a loop in one end of obstetrical chain by placing small links through the large link at one end of chain
- I. Place obstetrical chain on one foreleg above calf's fetlock and pull loop snugly
- J. Make a loop on other end of obstetrical chain and place loop on other foreleg
- K. Place mechanical calf pullers on lower portion of hindquarters with band on pullers over top of rump
- L. Hook obstetrical chain onto cable of calf pullers
- M. Take up slack on cable and chain
- N. Examine calving position, making sure fetus is still in normal position
- O. Pull down on mechanical calf pullers at a 45° angle from cow
- P. Apply pressure slowly and firmly with calf pullers

(NOTE: If there is no progress, a veterinarian should be consulted. An extreme amount of pressure on pelvis can cause a fractured pelvis or nerve damage resulting in paralysis of the hindquarters.)

- Q. Continue applying constant pressure downward until calf has arrived
- R. Check calf's breathing

(NOTE: If calf has trouble breathing, remove the mucus from the nose and mouth. If the calf continues to have trouble breathing, swing it back and forth to dislodge mucus.)

- S. Treat calf's navel cord with tincture of iodine
- T. Give cow vaccination of broad-range antibiotic according to label directions
- U. Check the cow for retained placenta and paralysis twelve hours after delivery

(NOTE: If a retained placenta occurs, furacin boluses should be given according to label directions. If paralysis occurs, the cow may need assistance to get on her feet. Sometimes a cow may need assistance for several days or weeks. Other cases may result in permanent paralysis.)

BIRTH ASSISTANCE
UNIT X

JOB SHEET #2--ASSIST EWE AT LAMBING

- I. Tools and equipment
 - A. Sheep shearing clippers
 - B. Lambing pen
 - C. Tincture of iodine
 - D. Obstetrical soap
 - E. Broad-range antibiotic
 - F. Furacin boluses
- II. Procedure
 - A. Tag lamb by shearing wool from around udder, flank, and dock
 - B. Place ewe in lambing pen two or three days before lambing
 - C. Check for signs of labor twice daily
 - D. Check labor progress when it begins, but do not disturb the ewe unless she has labored for some time and shows no signs of progress
 - E. Scrub hands and arms thoroughly with obstetrical soap
 - F. Wash ewe's vulva with obstetrical soap
 - G. Check to see that lamb is in proper position by inserting hand into vulva
(NOTE: Many times there is more than one fetus so put one lamb in position to be delivered first.)
 - H. Correct to normal lambing position
(NOTE: Call veterinarian because of fetal position if necessary.)
 - I. Lubricate vaginal walls and fetus using obstetrical soap
(NOTE: An ounce of lubrication is worth a ton of pressure.)
 - J. Check lambing position

JOB SHEET #2

K. Pull each of lamb's forelegs alternately outward and downward as the ewe strains

L. Continue pulling until lamb is born

(NOTE: If another fetus is present, check its position and pull on its forelegs until it is born, relubricating if necessary.)

M. Check lamb's breathing

(NOTE: If lamb has trouble breathing, remove the mucus from the nose and mouth. If the lamb continues to have trouble breathing, swing it back and forth to dislodge mucus.)

N. Treat lamb's navel cord with tincture of iodine

O. Give ewe vaccination of broad-range antibiotic according to label directions

P. Check ewe for retained placenta and paralysis twelve hours after delivery

(NOTE: If retained placenta occurs, furacin boluses should be given according to label directions. If paralysis occurs, the ewe may need assistance for several days; in other cases, there may be permanent paralysis.)

BIRTH ASSISTANCE
UNIT X

JOB SHEET #3--FARROW A SOW

I. Tools and equipment

- A. Farrowing facility (disinfected)
- B. Tincture of iodine
- C. Towels
- D. Obstetrical soap
- E. Disinfectant
- F. Hot water, 20 gallons
- G. POP (Purified Oxytocin Principle)
- H. Cord
- I. Scissors or knife
- J. Broad-range antibiotic

II. Procedure

- A. Sterilize farrowing facilities 3 or 4 days before farrowing

Example: One pound household lye mixed with 20 gallons hot water

- B. Wash sow with soap and water before placing in farrowing facility 3 or 4 days before farrowing
- C. Cut sow's ration in half 3 or 4 days before farrowing

(NOTE: No feed should be given to sow from twelve hours before farrowing to twelve hours after farrowing, but she should have free access to water at all times.)

- D. Check for birth of a pig every 15 minutes after labor begins

(NOTE: If there is more than 30 minutes between pigs or if sow has labored for 2 1/2 hours and shows no signs of progress, then a vaginal examination is necessary. If there are no obstructions and the pig is in the normal position, then the sow may have uterine inertia. A 1 to 2 cc dose of POP [Purified Oxytocin Principle] should be given intramuscularly or subcutaneously every 20 to 30 minutes as needed.)

JOB SHEET #3

- E. Pull umbilical cord out of sow gently when pig is born if it doesn't break off by itself
- F. Remove mucus from pig's mouth
- G. Dry pig off as soon as mucus is removed
- H. Tie umbilical cord off with cord about one inch from body
- I. Cut off remainder of umbilical cord with scissors or knife
- J. Dip or swab umbilical cord of pig in tincture of iodine to disinfect area
- K. Check sow for retained placenta 12 hours after delivery
- L. Give sow injection of broad-range antibiotic according to label directions

(NOTE: It is important to provide the new litter with a heat lamp in a corner. This will attract them to the safety of the corner and keep them warm.)

BIRTH ASSISTANCE UNIT X

JOB SHEET #4--CLIP NEEDLE TEETH OF NEWBORN PIGS

I. Tools and equipment

- A. Side-cutter pliers
- B. Litter of pigs

II. Procedure

(NOTE: One person will have to hold the pig while a second person clips the teeth.)

- A. Pick-up one pig, holding it under your arm with one hand and holding its head while pulling up on upper lips of pig with the other hand (Figure 1)
- B. Take side-cutter pliers and clip needle teeth (Figure 1)

FIGURE 1



(NOTE: Pigs are born with eight needle teeth, four on each jaw. These are sometimes called "baby" or "black" teeth. They are cut to prevent injury to the sow's udder or to litter mates. Do not pull or break off below the gums; this provides an avenue for infection. A clean cut should be made without leaving jagged edges.)

- C. Put pig down and repeat procedure with litter mates

BIRTH ASSISTANCE
UNIT X

TEST

NAME _____ SCORE _____

1. Match the terms on the right to the correct definitions.

- | | |
|--|----------------------|
| _____ a. Afterbirth | 1. Dystocia |
| _____ b. Anything dealing with birth from conception to delivery | 2. Parturition |
| _____ c. Cutting up of fetus while it is still inside the mother | 3. Breech |
| _____ d. Birth process | 4. Embryotomy |
| _____ e. Backward birth | 5. Obstetrical |
| _____ f. Difficult labor or delivery | 6. Placenta |
| _____ g. Surgical removal of the fetus | 7. Fetus |
| _____ h. Unborn offspring | 8. Caesarean section |

2. Identify the basic instruments needed to assist with calving difficulties.



a. _____ b. _____ c. _____

3. Select from the list below chemicals and drugs needed to assist with calving, lambing, and farrowing difficulties by placing an "X" by the correct answers.

- | | |
|-------------------------------------|---------------------------------|
| _____ a. Wound dressing | _____ f. Obstetrical soap |
| _____ b. Furacin boluses | _____ g. Time-release fly bait |
| _____ c. All-weather pain stick | _____ h. Tincture of iodine |
| _____ d. Hydroxocobalamin injection | _____ i. Broad-range antibiotic |
| _____ e. Triple sulfa boluses | |

4. Match the stages of parturition on the right to the correct descriptions.

- | | |
|---|----------------|
| _____ a. Uterine contractions will occur at intervals of about two minutes and will last one and one-half minutes | 1. Stage one |
| _____ b. Cow tries to isolate herself and shows general restlessness and tail switching or kicks at her side; uterine contractions occur at about 15 minute intervals; water sac passes through cervix and often ruptures, releasing water to the outside | 2. Stage two |
| _____ c. Calf is born; placenta is expelled 30 minutes to 8 hours following birth | 3. Stage three |

5. Match the birth positions on the right to the correct descriptions.

- | | |
|--|--------------------------------------|
| _____ a. Both front legs are outstretched in the birth canal with the head and neck extended between or along the legs | 1. Upside down and backward |
| _____ b. Head and neck must be pulled around in line with the birth canal | 2. Breech |
| _____ c. Calf or lamb is pushed back and folded foot is held in hand | 3. Dog-sitting position |
| _____ d. Rear legs must be pushed back before birth can occur | 4. Backwards with rear legs extended |
| _____ e. Breech birth in this position often requires no assistance | 5. Leg back |
| _____ f. Calf or lamb has rotated from the normal position because of a twisting of the uterus | 6. Head back |
| _____ g. Calf or lamb should be pushed forward and rear legs pulled into birth canal | 7. Normal |

6. Discuss the steps for vaginal examination by hand.

7. State the normal birth averages for swine.

- a. Gestation-- _____
- b. Litter size-- _____
- c. Duration of labor-- _____
- d. Interval between pigs-- _____
- e. Birth presentation-- _____
- f. Afterbirth-- _____

8. Match the farrowing difficulties on the right to the correct descriptions.

- | | |
|---|----------------------------|
| _____ a. One or all of the pigs may have died | 1. Distress or exhaustion |
| _____ b. Sow carries litter longer than 114 days | 2. Malpresentation of pig |
| _____ c. Sow becomes so excited she cannot concentrate her energy for the birth process | 3. Hysteria |
| _____ d. Womb has not contracted fully | 4. Uterine inertia |
| _____ e. Pig should be straightened up so that it is coming head first or hind feet first | 5. Foul discharge of vulva |
| _____ f. Sow is out of breath and hot to touch from heat | 6. Prolonged gestation |

9. Demonstrate the ability to:

- a. Assist a cow in calving.
- b. Assist ewe at lambing.
- c. Farrow a sow.
- d. Clip needle teeth of newborn pigs.

(NOTE: If these activities have not been accomplished prior to the test, ask the instructor when they should be completed.)

BIRTH ASSISTANCE
UNIT X

ANSWERS TO TEST

1. a. 6
b. 5
c. 4
d. 2
e. 3
f. 1
g. 8
h. 7
2. a. Mechanical calf puller
b. Obstetrical handle
c. Obstetrical chain
3. b, f, h, i
4. a. 2
b. 1
c. 3
5. a. 7
b. 6
c. 5
d. 3
e. 4
f. 1
g. 2
6. Discussion should include:
 - a. Check for signs of life
 - 1) Pull or pinch foot of fetus to cause movement
 - 2) Place finger in mouth of fetus to cause sucking movement of tongue
 - 3) Insert finger into rectum of fetus to cause constriction
 - b. Check birth position

7.
 - a. Ranges from 112 to 117 days, averaging 114 days
 - b. Ranges from 1 to 20, averaging 11 pigs
 - c. Ranges from 1/2 to 10 hours, averaging 2 1/2 hours
 - d. Ranges from 1 minute to 4 hours, averaging 15 minutes
 - e. Approximately 50 to 70% of the pigs are born head first, 24 to 25% of the pigs are born breech
 - f. Passed 1/2 to 2 1/2 hours after last pig is born
8.
 - a. 5
 - b. 6
 - c. 3
 - d. 4
 - e. 2
 - f. 1
9. Performance skills evaluated to the satisfaction of instructor